

USING ILLUSTRATED STORIES TO IMPROVE READING COMPREHENSION: EVIDENCE FROM JUNIOR HIGH SCHOOL STUDENTS IN INDONESIA

Miftahul Jannah^{1*}, Jufriadi², & Husnaini³
^{1,2,3} State Islamic University of Palopo, Palopo, Indonesia

*miftahul_jannah0076_mhs19@uinpalopo.ac.id

ABSTRACT

Reading comprehension is a core skill in English language learning, yet many Indonesian junior high school students continue to face difficulties due to limited vocabulary, inadequate strategies, and low motivation. Although international research has emphasized the benefits of multimodal texts and picture-based media, there is still a lack of empirical evidence on the use of illustrated stories at the junior high school level in Indonesia, particularly in localized contexts such as Palopo. This study addresses this gap by investigating the effectiveness of illustrated stories in improving students' comprehension of narrative texts. A pre-experimental one-group pre-test-post-test design was employed with 25 eighth-grade students at SMPN 08 Palopo. The instrument consisted of a 30-item multiple-choice reading comprehension test that measured literal, inferential, and evaluative understanding. The findings showed a significant improvement in students' performance, with mean scores rising from 38.36 in the pre-test to 61.40 in the post-test. A paired-sample t-test confirmed that the difference was statistically significant ($t = -5.253, p < 0.001$), and the effect size (Cohen's $d = 1.20$) indicated a large practical impact. These results demonstrate that illustrated stories can effectively enhance comprehension by reducing cognitive load and increasing motivation. The study recommends integrating illustrated stories into EFL classrooms as a practical strategy for improving literacy outcomes.

Keywords: EFL, Illustrated Stories, Junior High School, Pre-Experimental Study, Reading Comprehension

INTRODUCTION

Reading comprehension is a fundamental skill in English language learning, as it enables students to access and process information from a variety of sources, including textbooks. Reading comprehension is widely acknowledged as a fundamental skill in English as a foreign language (EFL) and a key determinant of academic success across subjects (Erwinda et al., 2021; Noordan & Md. Yunus, 2022). International assessments such as PISA have repeatedly placed Indonesian students below the OECD average in reading literacy, indicating persistent challenges in vocabulary breadth, inferential comprehension, and reading engagement (Amir et al., 2023; Nugrahanto & Zuchdi, 2019). National reports similarly highlight that many secondary school learners demonstrate low motivation to read

and have difficulty extracting meaning from English texts (Bolton et al., 2023; Kristiawan et al., 2022). These challenges are especially evident in junior high schools, where adolescents face the dual burden of mastering new linguistic forms and coping with limited exposure to authentic English reading materials.

To address such problems, researchers and educators have increasingly turned to multimodal and visually enriched pedagogies. Theoretical frameworks such as dual-coding theory (Luo, 2022) and multimedia learning theory (Mayer, 2024) suggest that combining verbal and visual input reduces cognitive load, enriches mental representations, and fosters deeper comprehension. In other words, when students process text supported by illustrations, they can build connections between linguistic and visual cues that make comprehension more effective and enjoyable. This theoretical insight has been reinforced by the broader field of multimodality and visual literacy, which emphasizes that contemporary meaning-making involves the integration of multiple semiotic resources—words, images, design, and layout (Lim et al., 2022; Rahmanu & Molnár, 2024).

Empirical studies over the past decade have provided evidence that illustrated texts and picture-based media significantly enhance comprehension outcomes. For example, previous research found that picturebooks support vocabulary development and inferential comprehension in young readers (Lepola et al., 2020), while another research reported that blending visuals with short stories improved motivation and autonomy in EFL contexts (Wong et al., 2020). More recent studies highlight that digital picture stories, comics, and gamified visual narratives can increase engagement and comprehension at multiple levels (literal, inferential, evaluative) across diverse age groups (Ngan & Lan, 2024; Suryapranata et al., 2023). These findings converge on the conclusion that visual support is not only beneficial but often essential in scaffolding learners' understanding of texts.

In Indonesia, several studies have investigated picture-based media in English instruction. A research demonstrated that picture stories improved narrative text comprehension among junior high students (Hasmila et al., 2021), while another research found that picture-and-picture techniques enhanced descriptive text comprehension (Ramadhani et al., 2024). Similarly, relevant research reported positive impacts of picture series on narrative writing skills (Sari et al., 2024). Despite these promising findings, most Indonesian research has been limited to primary or senior high school levels, often employing quasi-experimental designs. Few studies have examined the use of illustrated stories specifically in junior high schools, and even fewer have focused on localized contexts such as Palopo, where students face distinctive challenges in vocabulary acquisition and reading motivation.

Another important insight from global and local literature is that the effectiveness of illustrated stories depends strongly on implementation factors. Meta-analyses show that outcomes are maximized when teachers scaffold reading through activities such as vocabulary pre-teaching, guided picture analysis, and collaborative story reconstruction (Chowdhury & Ara, 2021; Davis et al., 2019; Kress & Leeuwen, 2020). Conversely, limited teacher preparation in visual literacy and lack of access to quality illustrated resources can constrain the benefits, particularly in under-resourced settings typical of many Indonesian

junior high schools. These considerations highlight the need not only for empirical evidence of effectiveness but also for context-sensitive implementation models.

Taken together, the literature suggests a strong theoretical and empirical case for using illustrated stories to enhance reading comprehension. However, notable gaps remain: (1) insufficient studies at the junior high level in Indonesia, (2) a lack of context-specific evidence from smaller cities such as Palopo, and (3) limited exploration of how illustrated stories can address both cognitive (vocabulary, comprehension strategies) and motivational (engagement, interest) dimensions of reading. This study is designed to fill those gaps by investigating the effectiveness of illustrated stories in improving the reading comprehension of eighth-grade students at SMPN 08 Palopo through a pre-experimental design. Beyond measuring learning gains, the study contributes localized, empirical evidence to the global discourse on multimodal literacy and offers practical recommendations for teachers seeking to make reading instruction more engaging and effective in EFL classrooms.

METHODS

Research Design

This study employed a pre-experimental design with a one-group pre-test and post-test model (Muse & Baldwin, 2021). This design was considered appropriate because it allowed the researcher to measure students' reading comprehension before and after the intervention to identify any significant improvement attributable to the treatment. While the absence of a control group and the relatively small sample size ($n = 25$) limit the generalizability of the findings, the design was chosen due to practical and contextual constraints in the school setting. Moreover, as an exploratory study in a localized context (Palopo), the design is justified for its ability to provide preliminary empirical evidence on the pedagogical value of illustrated stories in junior high EFL classrooms.

Potential threats to validity were acknowledged. Internal validity may be influenced by extraneous variables such as prior exposure to English outside the classroom, teacher effects, or maturation across the treatment sessions. External validity is limited by the purposive sampling of one intact class, restricting broader generalization. To mitigate these concerns, the researcher maintained consistency in teaching procedures, ensured the same instructor delivered all sessions, and administered both pre-test and post-test under standardized conditions. These strategies were intended to reduce uncontrolled variation and strengthen the credibility of the findings despite the methodological limitations.

Participants

The participants were 25 eighth-grade students of SMPN 08 Palopo in the 2024/2025 academic year. They were selected through purposive sampling (Robinson, 2023) based on their teachers' reports of low proficiency in reading comprehension. The sample included both male and female students, aged between 13 and 14 years.

Instruments

The instrument used in this study was a reading comprehension test consisting of 30 multiple-choice items developed to measure students' understanding of narrative texts,

including legends, fables, fairy tales, myths, and romances. The test items were designed to assess three levels of comprehension: literal comprehension (e.g., identifying the main idea and specific details), inferential comprehension (e.g., predicting outcomes and interpreting implicit meanings), and evaluative comprehension (e.g., drawing moral lessons or interpreting characters' motivations).

Prior to the main study, the instrument underwent validity and reliability testing. Item analysis confirmed that the majority of items met the criteria for validity, and only valid items were retained for the final version of the test. Reliability was calculated using Cronbach's Alpha, which yielded a coefficient of 0.82, indicating high internal consistency. Furthermore, content validity was ensured through expert judgment by two lecturers of English education, who verified the alignment of the test items with the syllabus and the objectives of reading comprehension instruction.

Examples of the test items include: "What is the main idea of the second paragraph?" with options that required students to select the correct main idea (literal comprehension). Another example was "Why did the fox praise the crow's voice?" designed to assess inferential comprehension by prompting students to recognize implied intentions. An evaluative item, on the other hand, asked: "What lesson can be learned from the story?" which required students to interpret the moral message of the text. These examples illustrate how the instrument systematically captured different dimensions of reading comprehension in line with the research objectives.

Procedure

The intervention was conducted over five instructional sessions, each lasting 90 minutes. Illustrated stories were used as the core teaching medium, covering different types of narrative texts. Each session involved pre-reading activities (vocabulary introduction and prediction), while-reading activities (guided reading with illustrations, comprehension questions), and post-reading activities (story reconstruction, group discussion).

Data Collection and Analysis

Data were collected from students' pre-test and post-test scores. Descriptive statistics (mean, standard deviation) and inferential statistics were employed. A paired-sample t-test was run using SPSS 25 to determine whether the difference between pre-test and post-test results was statistically significant.

RESULTS

The findings of this study are based on the analysis of students' reading comprehension scores obtained from the pre-test and post-test.

Table 1. Students' reading comprehension scores

Test	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test	25	20	73	38.36	14.73
Post-test	25	20	93	61.40	23.02

Table 1 illustrates the overall improvement in students' reading comprehension. The mean score increased from 38.36 in the pre-test to 61.40 in the post-test, while the maximum score also rose from 73 to 93. This result indicates that the use of illustrated stories had a positive effect on students' performance, with greater variation in scores observed in the post-test as reflected by the higher standard deviation.

Table 2. Classification of pre-test scores

Classification	Score Range	Frequency	Percentage
Fairly Good	66-75	3	12%
Poor	36-55	8	32%
Very Poor	0-35	14	56%
Total		25	100%

Table 2 shows the distribution of students' scores in the pre-test. The majority of students (56%) were classified as *very poor*, while 32% fell into the *poor* category. Only a small proportion (12%) achieved the *fairly good* level, and none of the students reached the *good* or *very good* categories. These findings confirm that students' initial reading comprehension ability was relatively low before the treatment.

Table 3. Classification of Post-Test Scores

Classification	Score Range	Frequency	Percentage
Very Good	86-95	3	12%
Good	76-85	5	20%
Fairly Good	66-75	6	24%
Fairly	56-65	4	16%
Poor	36-55	2	8%
Very Poor	0-35	5	20%
Total		25	100%

Table 3 presents the post-test results, showing significant improvement after the treatment. Students in the *good* and *very good* categories accounted for 32% of the total, and nearly one-quarter (24%) reached the *fairly good* category. Meanwhile, the proportion of students in the *poor* and *very poor* categories decreased compared to the pre-test. This indicates that illustrated stories helped a considerable number of students progress to higher performance levels.

Table 4. Paired sample t-test

Pair	Mean Difference	t	df	Sig. (2-tailed)
Pre-Post	-24.04	-5.253	24	<0.001

Table 4 displays the results of the paired sample t-test, which confirmed that the difference between pre-test and post-test scores was statistically significant. The t-value of -

5.253 exceeded the critical t-table value (2.064), and the significance value ($p < 0.001$) was far below the 0.05 threshold. This strongly supports the conclusion that illustrated stories had a meaningful effect on students' reading comprehension. In addition, the effect size as measured by Cohen's d was 1.20, which falls within the category of a large effect. This indicates that the improvement was not only statistically significant but also substantial in practical terms.

In sum, the results demonstrate that illustrated stories substantially improved students' reading comprehension. The intervention was especially effective in strengthening literal comprehension but also enhanced inferential and evaluative skills. Moreover, the use of illustrated stories helped redistribute student achievement, reducing the proportion of low achievers while enabling a significant number of students to attain good or very good levels of performance.

DISCUSSION

The findings of this study demonstrated a significant improvement in students' reading comprehension after the illustrated-story intervention, with a large effect size (Cohen's $d = 1.20$). Beyond statistical significance, these results can be understood more deeply through cognitive and motivational frameworks. From a cognitive perspective, the improvement aligns with Cognitive Load Theory (Sweller, 2020), which posits that learners' working memory has limited capacity. Illustrated stories provide visual scaffolding that reduces extraneous cognitive load by offering contextual cues to unfamiliar vocabulary and narrative structure (Bolkan & Goodboy, 2020; van Nooijen et al., 2024). This allows learners to allocate more cognitive resources to germane processing, namely integrating textual and visual information into coherent mental models. Similarly, Multimedia Learning Principles (Mayer, 2024), such as the modality principle and redundancy principle help explain why illustrated narratives are effective. By presenting information simultaneously in verbal and visual channels, the material promotes dual coding and prevents overload, thereby facilitating comprehension and retention.

These theoretical perspectives converge with Dual Coding Theory (Luo, 2022), which argues that verbal and non-verbal representations are stored in distinct but interconnected systems. Illustrated stories activate both coding systems, increasing the probability of retrieval and enhancing comprehension (Altun, 2018; Kendeou et al., 2020). In this study, the presence of illustrations likely supported students in constructing more vivid mental images of story events, which in turn improved their ability to recall details and infer meanings.

Motivationally, illustrated stories fostered a more engaging learning environment. The combination of images and texts captured students' attention and reduced anxiety typically associated with reading English passages. Research shows that visuals stimulate curiosity and imagination, which increase intrinsic motivation (Niland, 2023; Wong et al., 2020). During the intervention, students actively participated in group discussions, story reconstruction, and vocabulary exploration, suggesting that the illustrated format enhanced not only comprehension but also classroom engagement. This echoes international findings

that multimodal texts and picturebooks build positive reading identities and sustain learner interest (Jewitt et al., 2019; Papen & Peach, 2021).

The large effect size found in this study underscores that illustrated stories are not merely an enjoyable alternative but a pedagogically powerful medium. The intervention addressed two common barriers in EFL reading: limited vocabulary and low motivation. By integrating visuals, illustrated stories lowered the linguistic threshold needed for comprehension while simultaneously making reading more appealing. These findings extend international research by providing localized evidence from an Indonesian junior high school context, where few studies have been conducted.

In sum, the success of illustrated stories in this study can be attributed to their dual impact: cognitively, they reduce extraneous load and enhance dual coding; motivationally, they create a more engaging and less intimidating reading experience. Situated within the frameworks of Cognitive Load Theory, Dual Coding Theory, and Multimedia Learning, the findings demonstrate that illustrated stories are theoretically sound and practically effective for improving EFL reading comprehension.

CONCLUSION

This study investigated the use of illustrated stories to improve reading comprehension among eighth-grade students at SMPN 08 Palopo. The results revealed a significant increase in students' performance from the pre-test ($M = 38.36$) to the post-test ($M = 61.40$), with a large effect size (Cohen's $d = 1.20$). These findings demonstrate that illustrated stories are an effective pedagogical medium for enhancing comprehension in junior high school EFL classrooms.

Beyond confirming statistical improvement, the study carries broader theoretical and practical implications. Theoretically, the results support Dual Coding Theory and Multimedia Learning Theory by showing that integrating visual and verbal input reduces cognitive load and facilitates comprehension. This suggests that multimodal literacy approaches should be more systematically incorporated into EFL reading instruction. Practically, the findings emphasize that illustrated stories are not only entertaining but also powerful tools for scaffolding students with limited vocabulary and low motivation.

Based on the findings, it is recommended that teachers integrate illustrated stories into their reading instruction as engaging alternatives to text-only materials, supported by scaffolding activities such as vocabulary pre-teaching and guided discussion; material developers are encouraged to design culturally relevant and linguistically appropriate illustrated texts that meet the needs of Indonesian EFL learners; and policymakers and school administrators should facilitate access to illustrated resources and provide training for teachers in multimodal pedagogy, thereby ensuring that illustrated stories can be sustainably and effectively implemented in junior high school classrooms.

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