The Effectiveness of Picture Strip Story for Improving Eighth-Grade Students' Vocabulary Mastery in an EFL Classroom

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Abstract: *Vocabulary knowledge is a foundational component of second/foreign language proficiency because it supports comprehension and production across skills. However, vocabulary learning in many EFL classrooms remains dominated by decontextual memorization that often fails to engage learners and support retention. This study investigated whether Picture Strip Story (a sequence of pictures presented as a short narrative) could improve eighth-grade students' vocabulary mastery. A quantitative pre-experimental one-group pretest–posttest design was employed. Twenty-seven students were selected randomly from the eighth-grade population. Students completed a vocabulary pretest, received Picture Strip Story-based instruction, and then completed a posttest. The instrument consisted of multiple-choice and word-matching items. Results showed that the posttest mean score (M = 76.67, SD = 7.74) exceeded the pretest mean score (M = 57.59, SD = 10.90). A paired-samples t-test indicated a significant improvement, t(26) = 11.744, p < .001, with a large effect size (Cohen's dz = 2.26). These findings suggest that Picture Strip Story can be an effective instructional medium for vocabulary learning by providing contextualized input and visual support. Implications for classroom practice and recommendations for future research are discussed.*

Keywords: *comic strips EFL; vocational high school. picture strip story, vocabulary mastery*

INTRODUCTION

Vocabulary is central to language learning because learners need sufficient lexical knowledge to understand texts, participate in interaction, and express meaning accurately. Recent research emphasizes that vocabulary growth depends not only on exposure to words, but also on repeated encounters, meaningful use, and instructional support that helps learners connect form, meaning, and use (Nation, 2016; Schmitt & Schmitt, 2020; Webb & Nation, 2017). In junior secondary EFL contexts, students often experience vocabulary learning as a list-based activity, which may limit motivation and long-term retention. At the same

time, classroom time is constrained and teachers need practical media that can support both engagement and learning outcomes.

In many EFL settings, vocabulary development is constrained by limited exposure to English outside the classroom and by instructional practices that prioritize memorization over meaningful use. Yet, vocabulary mastery involves more than knowing dictionary meanings; learners need repeated encounters and opportunities to connect form, meaning, and contextual use across receptive and productive dimensions (Nation, 2016; Webb & Nation, 2017; Schmitt & Schmitt, 2020). When students meet new words only as isolated items, they may struggle to retain them and to recognize them in authentic texts or classroom interaction. Therefore, instructional activities that provide contextual cues, encourage noticing, and recycle target words through guided practice are especially important for supporting durable vocabulary growth (Pellicer-Sánchez, 2020; Schmitt & Schmitt, 2020).

Visual narrative media, such as picture-based story strips, are pedagogically promising because they can supply contextualized input while simultaneously supporting comprehension through images. According to multimedia learning principles, combining relevant visuals with verbal information can promote deeper processing and help learners build integrated mental representations, particularly when learners have limited linguistic resources (Mayer, 2020). In vocabulary learning, visual support may facilitate inference and noticing, and the narrative structure can keep learners engaged long enough to encounter target words repeatedly in meaningful contexts (Godfroid et al., 2018; Castillo-Cuesta & Quinonez-Beltran, 2022). Despite these theoretical advantages, classroom-based evidence on how Picture Strip Story impacts junior secondary learners' vocabulary outcomes remain uneven across contexts, which underscores the need for empirical examination in specific EFL classroom settings.

One promising approach is the use of visual narrative media such as picture-based story strips and comic strips. Visual narratives combine images and short texts, enabling learners to infer meaning from context, link new words to concrete referents, and maintain attention through story progression. Studies on comics and visual narratives in EFL suggest that this medium can enhance vocabulary learning and learner motivation because it provides contextualized language input and reduces cognitive burden through visual scaffolding (Basal et al., 2016; Castillo-Cuesta & Quinonez-Beltran, 2022; Maharani, 2021).

his study focuses on Picture Strip Story as a classroom medium for vocabulary instruction in an eighth-grade EFL classroom. The research question guiding this study is: To what extent does Picture Strip Story-based instruction improve students' vocabulary mastery? Accordingly, the hypotheses were: (H0)

there is no difference between pretest and posttest mean scores, and (H1) there is a difference between pretest and posttest mean scores.

LITERATURE REVIEW

1) Vocabulary learning in EFL

Vocabulary knowledge includes receptive and productive dimensions and develops gradually through multiple encounters with words in varied contexts. Effective vocabulary instruction typically combines meaning-focused input, deliberate attention to target items, and opportunities for retrieval and recycling (Nation, 2016; Schmitt & Schmitt, 2020; Terai et al., 2021). Research on learning mechanisms also highlights the role of spaced exposure and retrieval practice in supporting durable memory for word meanings (Goossens et al., 2016; Terai et al., 2021). In EFL classrooms, providing rich context and repeated practice is essential, particularly for learners who have limited exposure outside school.

Vocabulary mastery refers to learners' ability to recognize, understand, and appropriately use words in context. It includes **receptive vocabulary** (words learners can understand when listening or reading) and **productive vocabulary** (words learners can use when speaking or writing). In EFL contexts, receptive knowledge typically develops faster than productive knowledge because learners more frequently meet words through input than use them in output. However, meaningful mastery requires progression from mere recognition toward accurate and flexible use across contexts. Vocabulary knowledge is also multidimensional: learners must understand **form** (spelling/pronunciation), **meaning** (concept and associations), and **use** (collocation, grammatical patterns, and appropriateness). Instruction that only focuses on word meanings in isolation may not sufficiently support these dimensions, especially for junior secondary learners who still need strong scaffolding to connect new words with real communication.

2) Picture Strip Story and visual narratives for vocabulary instruction

Picture Strip Story can be understood as a series of images arranged sequentially to represent a short narrative, sometimes accompanied by brief dialogues or captions. This medium resembles comic strips in that it presents language embedded in a storyline, allowing learners to relate new words to actions, characters, and settings. Empirical studies in EFL contexts report positive effects of comics/strip stories on vocabulary outcomes, including improved scores and higher engagement (Aquariza & Susanto, 2023; Amir et al., 2024; Azizah & Hamid, 2022; Wahibah, 2016). Digital variants (e.g., webtoon-style comics) also show potential for motivating learners and supporting vocabulary exposure through episodic reading (Castillo-Cuesta & Quinonez-Beltran, 2022; Maharani, 2021; Nafisa et al., 2021).

Research highlights that vocabulary learning becomes more effective when words are learned through meaningful context, encountered repeatedly, and practiced through retrieval. Context supports learners in interpreting meaning, while repeated exposure strengthens memory traces and reduces forgetting. Recycling target words through short tasks, such as matching, categorizing, sentence completion, retelling, or role-playprovides

additional opportunities for retrieval, which helps learners retain and access vocabulary more easily. In classroom settings, teachers can improve vocabulary outcomes by combining (a) contextual input, (b) brief form-focused attention (pronunciation/spelling), and (c) guided practice that requires learners to recall and apply the words. This integrated approach is important for adolescents because motivation, attention, and engagement strongly influence how deeply students process new lexical items and whether they can transfer words into actual use.

3) Theoretical rationale: multimedia learning and multimodal support

From a multimedia learning perspective, presenting verbal information together with relevant images can facilitate learning when the visual and verbal channels are coordinated, because learners can build connections between words and visual representations (Mayer, 2020). Multimodal narratives can also support comprehension and content learning by providing multiple cues that help readers maintain coherence across a text (Brugar et al., 2018; Cook, 2016). For vocabulary learning, visual narratives may increase the likelihood of inferring meanings from context and noticing target words, which are important conditions for acquisition (Godfroid et al., 2018; Pellicer-Sánchez, 2020). Therefore, Picture Strip Story is expected to help students learn and remember vocabulary by offering contextualized input, visual scaffolding, and opportunities to practice words meaningfully.

Picture Strip Story is a form of **visual narrative** consisting of sequential pictures that present events in a storyline, sometimes supported by captions or short dialogues. As a learning medium, it offers **visual scaffolding** that can help students infer word meanings from images, actions, and story situations. This is particularly useful in EFL classrooms where learners may struggle to understand explanations delivered only in text or oral form. The sequential nature of picture strips also promotes comprehension because learners can follow the logical flow of events, which makes new vocabulary easier to anchor to specific scenes, characters, and actions. Empirical studies on comic strips and similar media suggest that visual narratives can enhance learners' vocabulary learning and engagement, as they provide contextualized language input in a format that is appealing and less intimidating than dense texts. Additionally, story-based visuals can reduce anxiety, encourage participation, and stimulate discussion, which indirectly increases students' exposure to and practice with target vocabulary.

The effectiveness of Picture Strip Story can also be explained through theories of **multimedia learning** and **noticing**. Multimedia learning proposes that learners process information through verbal and visual channels; when images and words are meaningfully integrated, students can form stronger connections between language and mental representations. For vocabulary learning, relevant visuals function as cues that help learners map new words to meanings and support memory. The noticing hypothesis and attention-based perspectives further suggest that learners need to notice language features before acquisition occurs. Picture Strip Story may increase noticing because the pictures draw attention, prompt curiosity about meaning, and provide immediate cues for inference. When supported by teacher guidance and follow-up practice, learners are more likely to

process target words deeply, resulting in better short-term gains and potentially stronger long-term retention.

RESEARCH METHOD

This study adopted a quantitative approach using a pre-experimental one-group pretest–posttest design to investigate the effectiveness of Picture Strip Story in improving students' vocabulary mastery. In this design, the same group of students was assessed before and after the intervention to identify score changes attributable to the instructional treatment. Although the design does not include a control group, it is appropriate for initial classroom-based evaluation of an instructional medium, allowing the researcher to document learning gains and describe the magnitude of improvement after the implementation of Picture Strip Story-based instruction.

The population comprised eighth-grade students from six classes (approximately 167 students). From this population, 27 students were selected through random sampling to represent the target group. The research instrument was a vocabulary test administered in two equivalent forms: a pretest and a posttest. The test included multiple-choice and word-matching items designed to measure students' recognition of word meanings and their ability to match words with appropriate contextual meanings based on the lesson content. The test items were aligned with the target vocabulary presented during instruction, and students' raw scores were converted to a 0–100 scale to facilitate interpretation and comparison across the two testing occasions.

The treatment was delivered through Picture Strip Story as the primary learning medium, in which students learned vocabulary through a sequence of pictures arranged to form a coherent narrative. Instruction proceeded through several stages: (1) introducing the topic and activating prior knowledge related to the story; (2) presenting the picture strips and guiding students to identify and pronounce target vocabulary; (3) supporting meaning inference by prompting students to use visual clues, captions/dialogues, and story context; and (4) reinforcing learning through short practice tasks such as matching words to pictures, completing simple sentences, and producing brief sentences or oral retellings using the target words. Data were analyzed using descriptive statistics (means and standard deviations) to summarize performance on the pretest and posttest. A paired-samples t-test was applied to examine whether the mean difference between pretest and posttest scores was statistically significant at $\alpha = .05$. To quantify the strength of the improvement, effect size was calculated using Cohen's dz $(t/\sqrt{n})$, providing an estimate of the magnitude of change within the same participants.

FINDINGS AND DISCUSSION

To address the research question, the findings are organized into descriptive and inferential results. Table 1 presents the pretest and posttest descriptive statistics, while Table 2 reports the paired-samples t-test results used to examine the significance of the score improvement.

Table 1. Pretest and posttest descriptive statistics (n = 27)

Test	Mean	SD	SE
Pretest	57.59	10.897	2.097
Posttest	76.67	7.740	1.490

This section reports the comparison between students' vocabulary scores prior to the intervention (pretest) and after the intervention (posttest). The summary of the score distribution and the statistical test outcomes are provided in Table 1 and Table 2.

Table 2. Paired-samples t-test results

Comparison	Mean diff. (Post–Pre)	95% CI	t(df)	p	Effect size (dz)
Posttest vs Pretest	19.074	[15.736, 22.413]	11.744 (26)	< .001	2.26

Tables 1 and 2 summarize students' vocabulary performance before and after the Picture Strip Story intervention. Overall, the mean score increased from 57.59 (SD = 10.90) on the pretest to 76.67 (SD = 7.74) on the posttest, yielding an average gain of 19.07 points. In addition to the mean improvement, the posttest standard deviation was lower than the pretest, which suggests students' performance became more consistent after instruction. This pattern is pedagogically meaningful because it indicates not only higher average achievement, but also a reduction in score dispersion across learners.

Inferential analysis confirmed that the observed gain was statistically significant. The paired-samples t-test showed a mean difference of 19.07 with a 95% confidence interval from 15.74 to 22.41, indicating that the true average improvement is very unlikely to be trivial. The test result, t(26) = 11.744, p < .001, was accompanied by a very large within-group effect size (dz = 2.26). Taken together, these results provide strong evidence that students learned substantially more target vocabulary after being taught using picture sequences as the main instructional medium.

A plausible explanation for this improvement is that Picture Strip Story provides contextualized input and visual scaffolding that supports form-meaning mapping. Vocabulary learning is more efficient when learners encounter words in meaningful contexts, notice them, and can connect new lexical items with concrete referents or events (Nation, 2016; Schmitt & Schmitt, 2020). In a story-strip format, images help students infer meaning and sustain attention to the narrative, which may increase noticing of target words. Studies on attention during reading show that allocating attention to unfamiliar words and processing contextual cues are important conditions for vocabulary uptake (Godfroid et al., 2018; Pellicer-Sánchez, 2020).

From a multimedia learning perspective, learning can be strengthened when verbal information (words or short captions) is paired with relevant visuals, because learners can build integrated mental representations across modalities (Mayer, 2020). In classroom practice, picture sequences can lower cognitive load for beginners by providing immediate semantic support, allowing students to focus on lexical form, pronunciation, and usage. Furthermore, when teachers design follow-up tasks such as matching, sentence completion, and short retellings, students receive retrieval opportunities and recycling of target items, which are known to support durable memory (Goossens et al., 2016; Terai et al., 2021).

The present findings align with a growing body of EFL research showing that comics, strip stories, and other visual narrative media can enhance vocabulary outcomes and classroom engagement. Prior studies report that learners often benefit from the narrative structure and the motivational value of image-supported texts, resulting in higher vocabulary scores and more active participation (Basal et al., 2016; Castillo-Cuesta & Quinonez-Beltran, 2022; Aquariza & Susanto, 2023; Amir et al., 2024). Multimodal narrative research also suggests that visuals can support comprehension and meaning-making, which in turn can create better conditions for vocabulary acquisition because students understand the storyline and can relate new words to communicative functions in the text (Brugar et al., 2018; Cook, 2016).

In practical terms, the results imply that teachers can use Picture Strip Story to introduce and consolidate vocabulary through a structured lesson cycle: (1) pre-teach a small set of high-utility words; (2) guide learners to infer meanings during story viewing/reading; (3) provide brief pronunciation and form-focused checks; and (4) implement short retrieval and production tasks (e.g., matching, sentence writing, role-play) that recycle the same items across meetings. This sequencing is consistent with recommendations that effective vocabulary instruction should balance meaning-focused input, deliberate attention to target forms, and opportunities for repeated use (Nation, 2016; Schmitt & Schmitt, 2020).

However, the study design also requires careful interpretation. Because the research used a one-group pretest–posttest design, the gain may partly reflect testing effects, maturation, or other classroom factors that were not controlled. For stronger causal inference, future research should include a comparison group, report reliability evidence for the test, and add a delayed posttest to examine retention. It would also be valuable to compare print versus digital strip stories and test which task types (e.g., inference-focused vs retrieval-focused) produce the largest gains, as recent work suggests modality and task design can shape learning outcomes (Castillo-Cuesta & Quinonez-Beltran, 2022; Lee & Aspiranti, 2023).

CONCLUSION

The present study demonstrates that Picture Strip Story is an effective medium for improving eighth-grade students' vocabulary mastery in an EFL classroom. Students' posttest scores were substantially higher than their pretest scores, indicating meaningful progress after the intervention. These results suggest that presenting vocabulary through a sequence of pictures within a coherent narrative can support learners in understanding and retaining new words, likely because the visual context helps students infer meaning, maintain attention, and build stronger form–meaning connections than decontextualized memorization.

Beyond the statistical improvement, the findings highlight the pedagogical value of contextualized and visually supported vocabulary instruction for junior secondary learners who may have limited exposure to English outside school. Picture Strip Story offers a practical classroom alternative that can be integrated into regular lessons to promote engagement and encourage repeated retrieval of target words through guided tasks. However, because this study used a one-group pretest–posttest design, future research should strengthen causal claims by including control/comparison groups, employing delayed posttests to measure retention, and examining which instructional features (e.g., task type, story complexity, print vs digital format) most strongly influence vocabulary gains.

For teachers, Picture Strip Story can be integrated into vocabulary lessons by selecting age-appropriate narratives, highlighting target words, and designing short tasks that encourage meaning inference and repeated retrieval. For schools, providing access to both print and digital visual narratives (including comics/webtoon-style materials) may support engagement and out-of-class exposure. For researchers, future studies should include control groups, larger samples, delayed posttests, and qualitative data (e.g., interviews or classroom observation) to better explain how learners interact with the media and which instructional steps drive vocabulary gains.

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