

THE EFFECTIVENESS OF INTERACTIVE PICTURE BOOKS IN DEVELOPING STUDENTS' ENGLISH VOCABULARY MASTERY

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ABSTRAK

Penelitian ini bertujuan untuk mengkaji efektivitas penggunaan buku bergambar interaktif dalam mengembangkan penguasaan kosakata bahasa Inggris siswa. Penelitian dilakukan di SMP N 02 Siwalan dengan melibatkan siswa kelas tujuh yang dibagi menjadi dua kelompok: kelompok eksperimen yang diajar menggunakan buku bergambar interaktif dan kelompok kontrol yang menerima pembelajaran kosakata secara tradisional. Penelitian ini menggunakan desain kuasi-eksperimen dengan tes awal (pretest) dan tes akhir (posttest). Data dianalisis menggunakan statistik deskriptif dan inferensial melalui Uji Mann-Whitney U karena data tidak terdistribusi secara normal.

Hasil penelitian menunjukkan bahwa kedua kelompok mengalami peningkatan skor kosakata setelah perlakuan, dengan kelompok eksperimen memperoleh kenaikan rata-rata yang sedikit lebih tinggi dibandingkan kelompok kontrol. Namun, perbedaan antara kedua kelompok tersebut tidak signifikan secara statistik. Meskipun demikian, data kualitatif dari observasi kelas dan angket siswa menunjukkan bahwa peserta didik memberikan respons positif terhadap penggunaan buku bergambar interaktif. Sebagian besar siswa menyatakan bahwa mereka menikmati proses pembelajaran dan merasa lebih termotivasi. Hasil ini menunjukkan bahwa buku bergambar interaktif dapat menjadi media pembelajaran kosakata yang menarik dan mendukung, meskipun dampak terukurnya dapat bervariasi tergantung pada faktor kontekstual.

Kata kunci: *Buku bergambar interaktif, penguasaan kosakata, pembelajaran bahasa Inggris, siswa EFL, media pengajaran*

ABSTRACT

This study aims to examine the effectiveness of interactive picture books in developing students' English vocabulary mastery. The research was conducted at SMP N 02 Siwalan with seventh-grade students divided into two groups: an experimental group that was taught using interactive picture books and a control group that received traditional vocabulary instruction. The research applied a quasi-experimental design with pretest and posttest assessments. Data were analyzed using descriptive and inferential statistics through the Mann-Whitney U Test due to the non-normal distribution of the data. The findings showed that both groups improved their vocabulary scores after treatment, with the experimental group achieving a slightly higher mean gain than the control group. However, the difference between the two groups was not statistically significant. Despite this, qualitative data from classroom observations and student questionnaires indicated that learners responded positively to the use of interactive picture books. Most students expressed enjoyment and increased motivation during the learning process. These results suggest that interactive picture books can be an engaging and supportive medium for vocabulary learning, even though their measurable impact may vary depending on contextual factors.

Keywords: *interactive picture books, vocabulary mastery, English language learning, EFL students, teaching media*

INTRODUCTION

Vocabulary is a fundamental element in the process of learning a second or foreign language. It acts as the foundation for mastering other language skills such as reading, writing, listening, and speaking. Students who lack sufficient vocabulary often experience difficulties in understanding texts, following spoken instructions, and

expressing their thoughts clearly. This can limit their academic progress and reduce their confidence in using English communicatively (Susanto, 2017; Mustafa, 2019).

In many Indonesian EFL classrooms, vocabulary instruction tends to rely heavily on traditional methods. Teachers often present word lists, ask students to memorize definitions, and conduct mechanical exercises such as fill-in-the-blank or matching tests. Although such strategies may introduce students to new words, they frequently fail to promote deep understanding or long-term retention (Amanda et al., 2021). Moreover, repetitive drills and isolated vocabulary tasks can reduce student motivation and interest in language learning (Rahman & Chiu, 2022).

To overcome these limitations, educators are encouraged to integrate more engaging and meaningful teaching media. Among the alternatives, interactive picture books have emerged as a promising tool to support vocabulary learning in context. Picture books present words within rich stories and illustrations, allowing students to infer meaning naturally. This type of visual-verbal input helps learners connect vocabulary to mental images, emotions, and situations, which enhances memory and understanding (Kurniawan et al., 2024).

The use of visual media in language learning is supported by established theoretical foundations. According to Dual Coding Theory (Paivio, 1991), learners process verbal and visual information through two separate channels in the brain. When these channels are activated together, as in the case of illustrated texts, comprehension and recall are strengthened. In addition, Krashen's Input Hypothesis (1982) highlights the importance of comprehensible and engaging input in second language acquisition—criteria that interactive picture books are well positioned to fulfill.

Previous studies have demonstrated the positive effects of using picture-based media for vocabulary development. Liando et al. (2022) found that junior high school students taught with image-supported instruction showed higher vocabulary retention. Similarly, Kurniawan et al. (2024) reported that interactive reading materials such as pop-up QR books increased both student participation and comprehension. Rahman and Chiu (2022) also observed that picture books improved learners' understanding of word meanings and made the learning experience more enjoyable. Furthermore, Montag, Jones, and Smith (2015) found that children's picture books contain significantly more unique word types than everyday speech, suggesting that picture books provide rich lexical input for language acquisition.

Despite these encouraging findings, limited research has examined the statistical impact of using interactive picture books in EFL classrooms, particularly at the secondary level in Indonesia. Most existing studies rely on qualitative data or focus on young learners in early education. There is a need for more empirical evidence that explores how picture books influence vocabulary mastery when compared to conventional teaching methods among adolescent learners.

In addition to effectiveness in terms of test scores, it is equally important to consider students' perceptions of the learning media used. Research shows that students are more likely to engage with materials they find enjoyable and accessible (Nugraha et al., 2022). Positive perceptions can lead to increased motivation and effort, which in turn contribute to better learning outcomes. Therefore, assessing how students respond to interactive picture books is essential in evaluating their pedagogical value.

Moreover, the integration of picture books is particularly relevant for junior high school students, whose developmental stage benefits from multisensory input. At this age, learners begin to engage with more abstract language tasks, and the use of illustrations can facilitate comprehension, especially for less proficient students. Picture books can also stimulate imagination, discussion, and contextual thinking, which aligns with the goals of communicative and literacy-based approaches in English teaching.

Given these considerations, this study aims to investigate the effectiveness of interactive picture books in improving vocabulary mastery among seventh-grade students in an Indonesian junior high school. It also seeks to explore students' perceptions of this media. The findings are expected to provide evidence for the practical use of picture books in EFL classrooms and to offer insights for English teachers seeking alternative methods to enhance vocabulary instruction.

RESEARCH METHODS

This research applied a quasi-experimental design with a pretest–posttest control group to examine the effectiveness of interactive picture books in developing students' English vocabulary mastery. This design is appropriate when full randomization is not practical, yet researchers still seek to determine cause-and-effect relationships between treatment and outcome.

The study was conducted at SMP N 02 Siwalan in Central Java, Indonesia. The population consisted of all seventh-grade students in the 2024/2025 academic year. Two existing classes were selected using purposive sampling. Class VII-A was assigned as the experimental group ($n = 26$), while Class VII-B served as the control group ($n = 31$). The experimental group received vocabulary instruction using interactive picture books, while the control group was taught using traditional textbook-based methods.

The primary instrument used was a vocabulary test developed based on the school's syllabus, consisting of multiple-choice, matching, and short answer items. The test was conducted as both a pretest and posttest to assess students' vocabulary mastery before and after treatment. In addition, a student perception questionnaire was distributed to the experimental group to collect qualitative data about their learning experiences. The questionnaire used a 4-point Likert scale and was adapted from existing instruments used in vocabulary media research.

Data were analyzed using both descriptive and inferential statistics. The Shapiro-Wilk and Kolmogorov-Smirnov tests were used to check data normality. Since the data were not normally distributed, the Mann-Whitney U Test was applied to compare posttest scores between groups. The use of non-parametric tests was appropriate based on the distribution pattern and sample size.

RESULTS

This section presents the results of the vocabulary pretest and posttest for both experimental and control groups, along with supporting statistical analyses. The questionnaire data regarding students' perceptions of interactive picture books are also presented.

1. Descriptive Statistics

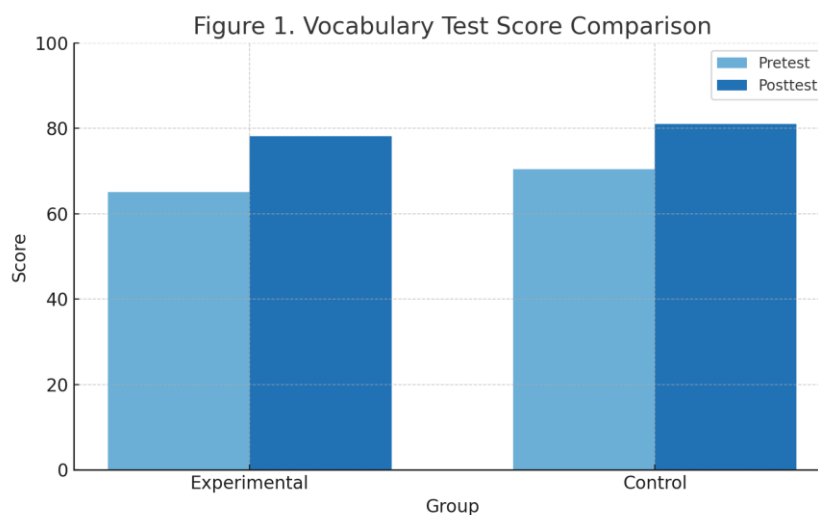
The pretest and posttest scores of both groups were analyzed to examine vocabulary improvement. The descriptive statistics are shown in Table 1.

Table 1. Descriptive Statistics of Vocabulary Test Scores

| Group | N | Pretest Mean | Posttest Mean | Mean Gain |
|--------------------|----|--------------|---------------|-----------|
| Experimental Group | 26 | 65.04 | 78.15 | 13.11 |
| Control Group | 31 | 70.39 | 81.00 | 10.61 |

Figure 1 shows a visual comparison of vocabulary improvement in both groups.

Figure 1. Vocabulary Test Score Comparison



Based on the table, it can be seen that both groups experienced a positive gain in scores. The experimental group showed an average increase of 13.11 points, while

the control group increased by 10.61 points. Although the control group had a higher posttest mean (81.00), the experimental group had a greater improvement compared to their pretest scores, indicating potential effectiveness of interactive picture books as a learning medium.

However, further analysis was conducted to examine whether the improvement was statistically significant. Normality and homogeneity tests were performed to determine the appropriate statistical method. The results showed that the data were not normally distributed, thus the Mann-Whitney U test was used.

2. Normality and Homogeneity Tests

To determine the appropriate statistical test for hypothesis testing, normality and homogeneity of the data were analyzed using SPSS. The results are presented in Tables 2 and 3.

Table 2. Shapiro-Wilk Normality Test

| Group | Sig. (Pretest) | Sig. (Posttest) | Normality |
|--------------|----------------|-----------------|---|
| Experimental | 0.194 | 0.004 | Pretest: Normal Posttest: Not Normal |
| Control | 0.002 | <0.001 | Not Normal |

Since most Sig. values < 0.05, the data are not normally distributed, and thus a non-parametric test was used.

Table 3. Homogeneity of Variance (Levene's Test)

| Test Variable | Sig. | Homogeneous? |
|---------------|-------|--------------|
| Pretest | 0.788 | Yes |
| Posttest | 0.377 | Yes |

The homogeneity assumption is met, meaning both groups have equal variances.

3. Mann-Whitney U Test

To compare the effectiveness between groups, a Mann-Whitney U Test was conducted. The results are in Table 4.

Table 4. Mann-Whitney U Test Results

| Comparison | U Value | Z Value | Sig. (2-tailed) | Significant? |
|------------|---------|---------|-----------------|--------------|
| Pretest | 328.000 | -1.212 | 0.225 | No |

| | | | | |
|----------|---------|--------|-------|----|
| Posttest | 391.000 | -0.196 | 0.845 | No |
|----------|---------|--------|-------|----|

As shown in Table 2, the significance value for the posttest was 0.845, which is higher than 0.05. This indicates that the difference in vocabulary mastery between the experimental and control groups after treatment was not statistically significant. Therefore, even though there was improvement in both groups, the use of interactive picture books did not result in a significantly greater effect compared to traditional methods within the scope of this study.

The lack of significant difference may be influenced by several factors. One of the most likely reasons is the limited treatment duration. The vocabulary lessons using picture books were conducted in only a few sessions, which may not have been enough to produce measurable differences. Green and Keogh (2024) and Rahman and Chiu (2022) both emphasize the importance of repeated and extended exposure when using media-based vocabulary instruction.

Additionally, the size of the sample and the range of vocabulary tested could affect the result. The vocabulary words in this study may not have varied enough in difficulty to show a wide performance gap. Montag et al.'s (2015) findings confirm that picture books contain rich vocabulary, but such benefits are best seen when learners interact with them over time. Furthermore, the findings are in line with Dual Coding Theory (Paivio, 1991) and Krashen's Input Hypothesis (1982), which highlight the importance of multimodal and comprehensible input. Though the numerical data in this study did not reach statistical significance, the use of picture books still holds pedagogical potential in language learning.

4. Student Questionnaire Results

To support the analysis of the effectiveness of interactive picture books, students from the experimental group were given a questionnaire containing five statements related to their learning experience. The responses were measured using a 4-point Likert scale: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The aim was to capture students' affective reactions, motivation, and perceived benefits after using picture books in vocabulary learning.

Table 5 shows the percentage of student responses for each item. Overall, the majority of students expressed positive perceptions.

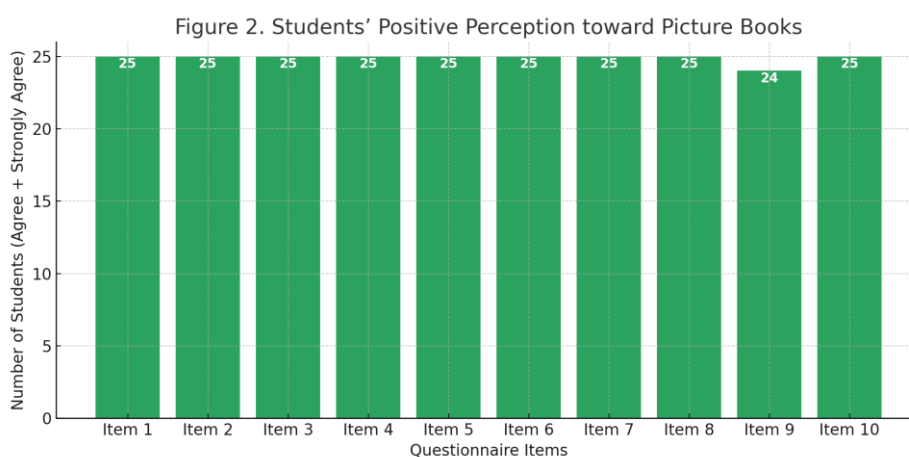
Table 5. Student Perception Results

| Item | Statement | SA | A | D | SD |
|------|---|----|---|---|----|
| 1. | I enjoy learning vocabulary with picture books. | 18 | 7 | 1 | 0 |
| 2. | Picture books make it easier | 20 | 5 | 1 | 0 |

| | | | | | |
|-----|---|----|---|---|---|
| | to understand new words. | | | | |
| 3. | I remember words better with illustrations. | 17 | 8 | 1 | 0 |
| 4. | I feel more motivated during lessons with picture books. | 21 | 4 | 1 | 0 |
| 5. | The stories in the books make learning more interesting. | 19 | 6 | 1 | 0 |
| 6. | Picture books help me understand word meaning better. | 20 | 5 | 1 | 0 |
| 7. | I feel more confident using vocabulary I learned from them. | 18 | 7 | 1 | 0 |
| 8. | I like the stories in the picture books.. | 22 | 3 | 1 | 0 |
| 9. | I want to use picture books again in English class. | 17 | 7 | 1 | 1 |
| 10. | Learning with picture book is better than memorizing lists. | 20 | 5 | 1 | 0 |

To visualize the responses, Figure 2 presents the percentage of “Strongly Agree” and “Agree” responses.

Figure 2. Students’ Positive Perception toward Picture Books



For the first statement, “I enjoy learning English using picture books,” 73.1% of students strongly agreed and 26.9% agreed, meaning that 100% of students had a positive emotional response to the use of picture books. This indicates that the medium was engaging and enjoyable for them.

The second statement, "The pictures help me understand the meaning of words," received similarly high agreement, with 80.8% strongly agreeing and 19.2% agreeing. This suggests that the visual context supported comprehension, which aligns with Paivio's Dual Coding Theory (1991), where verbal and visual inputs together enhance retention.

In the third statement, "I feel more confident using new words after reading the picture book," a combined 96.2% of students agreed, demonstrating an increase in learner confidence. Although this was not reflected as a significant difference in test scores, it suggests a positive psychological impact that can support long-term vocabulary development.

The fourth statement, "I find it easier to remember vocabulary when it's presented in stories and pictures," was agreed upon by 88.5% of students, highlighting the effectiveness of contextualized learning through narratives and illustrations.

Finally, the fifth statement, "I prefer using picture books over regular textbooks," received 84.6% positive responses (strongly agree and agree combined). This shows that students favored the interactive and visual aspects of the material compared to traditional methods.

In summary, the questionnaire results show that students had a highly favorable perception of learning with interactive picture books. These affective and perceptual responses serve as valuable support for the use of such media, even though the statistical results from the posttest did not show a significant difference. The positive perception may lead to increased motivation, confidence, and future vocabulary gains if the method is applied over a longer period.

DISCUSSION

The findings of this study reveal that while both groups showed improvements in vocabulary scores, there was no statistically significant difference between the experimental and control groups. However, the experimental group indicated a slightly higher mean gain, and qualitative data suggest a positive learning experience. These findings contribute to the ongoing discussion on the role of interactive and visual-based learning media in EFL classrooms.

One possible explanation for the lack of significant difference is the short duration of the intervention. Vocabulary development often requires repeated exposure and practice over time (Green & Keogh, 2024). A single or limited number of sessions may not be sufficient to result in statistically significant outcomes. This aligns with previous studies suggesting that media-based instruction is more effective when conducted consistently across a semester (Liando et al., 2022).

Despite the statistical outcome, student perception data revealed strong enthusiasm and engagement. Most students agreed that picture books made learning more

enjoyable and that illustrations supported their understanding. This supports the Dual Coding Theory (Paivio, 1991), which proposes that combining verbal and visual input can enhance memory retention. Students also expressed feeling more confident using vocabulary introduced through stories, reflecting the motivational power of narrative-based learning. Additionally, Montag et al.'s (2015) findings reinforce the role of picture books as a rich source of diverse vocabulary, significantly greater than that found in everyday speech. Such evidence underlines the pedagogical potential of picture books in vocabulary development.

Furthermore, the findings align with Krashen's Input Hypothesis (1982), which emphasizes the importance of comprehensible input in language acquisition. The visual support provided by picture books helped students access meaning more intuitively, reducing cognitive load and facilitating learning. This also explains the higher affective engagement reported by students during classroom observation.

While the use of interactive picture books did not significantly outperform traditional methods in test results, the positive affective and subjective responses suggest that they have pedagogical value beyond measurable scores. Teachers should consider integrating such media not just for vocabulary improvement, but also to foster learner motivation and interest—two critical factors in long-term language acquisition success.

CONCLUSION

Based on the findings of this study, several important conclusions can be derived regarding the use of interactive picture books in vocabulary instruction for junior high school students.

1. The results showed that both the experimental and control groups improved their vocabulary scores after the treatment. However, the Mann-Whitney U Test revealed no statistically significant difference between the two groups, even though the experimental group achieved a slightly higher mean gain. This indicates that interactive picture books may support vocabulary learning, although not always in ways that are statistically measurable within a short intervention.
2. The experimental group displayed highly positive responses toward the use of picture books. Questionnaire results confirmed that students enjoyed the activities, felt more motivated, and believed that illustrations helped them better understand and remember vocabulary. These affective and subjective responses suggest that picture books offer pedagogical advantages that go beyond test results.
3. The findings are consistent with Dual Coding Theory and the Input Hypothesis, both of which highlight the importance of meaningful, visual, and comprehensible input in second language acquisition. Interactive picture books fulfill these criteria by combining storytelling with imagery, which facilitates vocabulary retention and contextual learning.

4. For classroom practice, interactive picture books can be used as an engaging alternative to traditional instruction. Teachers are encouraged to implement them not only for vocabulary introduction but also to enhance student motivation and classroom participation. However, to achieve optimal results, this approach should be applied consistently and supported with structured activities.
5. Future research is recommended to examine the long-term impact of using picture books over extended periods. Additionally, researchers can explore how variations in illustration style, book content, or student learning profiles affect vocabulary acquisition outcomes in different EFL learning contexts.

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