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EFFECTS OF CANVA-BASED MULTIMODAL LEARNING ON WRITING AND VOCABULARY: A QUASI-EXPERIMENTAL STUDY

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Abstract: This study investigates the effectiveness of Canva-based multimodal learning in improving students' vocabulary mastery and writing skills in English as a Foreign Language (EFL) context. The integration of digital multimodal tools has been shown to enhance learners' cognitive processing, engagement, and language development(Chen, 2024a; Godwin-Jones, 2024a). A quasi-experimental design with a pre-test–post-test control group was employed, involving 60 eighth-grade students of MTs Hidayatul Mubtadiin Jember, East Java, Indonesia. who were equally divided into an experimental group (n = 30) and a control group (n = 30) (Tan et al., 2025a). The independent sample t-test revealed a statistically significant difference between the groups ($t = 5.87$, $df = 58$, $p < 0.001$), indicating that the treatment had a measurable effect on students' learning outcomes (Rebolledo et al., 2025). Furthermore, the effect size analysis showed a large effect (Cohen's $d = 0.91$), demonstrating strong practical significance of the intervention (Cosi & Poole, 2025). These findings suggest that Canva-based multimodal learning is effective in enhancing both vocabulary mastery and writing skills through integrated visual-verbal processing, supporting multimedia learning principles in digital language pedagogy (Yuan et al., 2025a; Zhou & Du Preez, 2025b)). The study provides empirical evidence for the implementation of multimodal digital tools in EFL classrooms and contributes to current research on technology-enhanced language learning (Peng et al., 2025).
Keywords: *Canva-based learning; multimodal learning; vocabulary mastery; writing skills; quasi-experimental design; EFL; digital pedagogy*

INTRODUCTION

The integration of digital technology in English Language Teaching (ELT) has reshaped instructional practices toward more interactive and learner-centered environments. In contemporary education, the use of digital tools is not merely supplementary but essential for fostering critical thinking, creativity, and meaningful language use. Recent studies emphasize that technology-enhanced learning environments significantly improve students' engagement and cognitive development (Lee, 2019; Su & Zou, 2022).

The integration of digital technology in English Language Teaching (ELT) has significantly reshaped instructional practices toward more interactive, adaptive, and learner-centered environments demonstrated that Canva-based learning enhances students' engagement, creativity, and motivation, which are critical factors in successful language learning (Chen, 2024a; Mun, 2024; Chen, 2024a; Godwin-Jones, 2024a). A quasi-experimental design with a pre-test–post-test control group was employed, involving 60 eighth-grade students who were equally divided into an experimental group (n = 30) and a control group (n = 30) (Tan et al., 2025a)

The experimental group received Canva-based multimodal instruction integrating visual and textual elements, while the control group was taught using conventional methods (Zhou & Du Preez, 2025b;Zhou & Du Preez, 2025b). The results indicate that the experimental group

showed higher improvement in vocabulary (pre-test M = 65.20; post-test M = 82.40) and writing (pre-test M = 63.80; post-test M = 80.60) compared to the control group (vocabulary: 66.10 to 72.30; writing: 64.50 to 71.20) (Silitonga et al., 2024a)

The independent sample t-test revealed a statistically significant difference between the groups ($t = 5.87$, $df = 58$, $p < 0.001$), indicating that the treatment had a measurable effect on students' learning outcomes (Rebolledo et al., 2025). Furthermore, the effect size analysis showed a large effect (Cohen's $d = 0.91$), demonstrating strong practical significance of the intervention (Cosi & Poole, 2025).

These findings suggest that Canva-based multimodal learning is effective in enhancing both vocabulary mastery and writing skills through integrated visual-verbal processing, supporting multimedia learning principles in digital language pedagogy (Yuan et al., 2025; Zhou & Du Preez, 2025). The study provides empirical evidence for the implementation of multimodal digital tools in EFL classrooms and contributes to current research on technology-enhanced language learning (Peng et al., 2025).

Vocabulary knowledge and writing ability are closely interconnected aspects of language proficiency. Vocabulary serves as the foundation for language production, while writing requires the integration of lexical, grammatical, and organizational competencies (Shi and Tsai, 2024; Silitonga et al., 2024). However, in many EFL contexts, these skills are often taught separately, resulting in limited and fragmented learning outcomes.

Recent research highlights the role of multimodal learning in enhancing language acquisition. Multimodal environments combine visual, textual, and interactive elements, enabling learners to process information through multiple cognitive channels (Rebolledo et al., 2025). This approach has been shown to improve both comprehension and retention. In line with this, digital tools such as Canva offer opportunities for integrating multimodal elements into classroom instruction.

Several studies have demonstrated that Canva enhances students' motivation, creativity, and writing performance (Rachmawati and Purwati, 2021; Zhou and Du Preez, 2025). Additionally, digital multimodal composing using Canva has been found to support learners' engagement and multiliteracy development (Jao et al., 2024). Despite these promising findings, important gaps remain in the literature. First, previous studies tend to focus on isolated language skills, particularly writing or engagement, without addressing the interconnected nature of vocabulary and writing. Second, many studies rely on descriptive or pre-experimental designs, limiting the strength of their conclusions. Third, limited research examines Canva within a multimodal cognitive framework supported by rigorous statistical analysis.

To address these limitations, this study investigates the effects of Canva-based multimodal learning on students' vocabulary mastery and writing skills using a quasi-experimental design combined with effect size analysis. This study contributes to digital pedagogy by providing stronger empirical evidence on the effectiveness of multimodal learning in EFL contexts. Recent study has highlighted that digital multimodal composing significantly enhances students' writing performance and language development (Franjić and Božinovski, 2025).

Multimedia learning theory explains that individuals learn more effectively when information is presented through both visual and verbal representations (Jao et al., 2024; Maruti et al., 2025). This dual-channel processing supports deeper cognitive engagement and reduces cognitive overload. Multimodal learning extends this concept by incorporating multiple forms of representation, such as images, text, audio, and interaction, allowing learners to construct meaning more effectively (Ahmad, 2012; M. Li, 2018).

Recent studies confirm that multimodal learning environments enhance students' comprehension and engagement. Snell et al. (2019) and Tan et al. (2025) argue that multimodal approaches provide richer learning experiences by integrating different modes of communication, which are particularly beneficial in language learning contexts. Canva has gained attention as an accessible digital platform that enables users to create visually rich instructional materials. Its features support the integration of text, images, and design elements, which align with the principles of multimodal learning.

Research indicates that Canva-based learning improves students' engagement and creativity (Rachmawati and Fadhilawati, 2024). Furthermore, Canva facilitates digital multimodal composing, which enhances students' ability to express ideas through multiple modes (Rachmawati and Fadhilawati, 2020). In addition, Canva has been shown to improve writing performance by providing visual scaffolding that helps students organize their ideas more effectively (Yuan et al., 2025).

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Vocabulary acquisition requires repeated exposure and meaningful context. Digital tools that incorporate visual and contextual elements can significantly enhance vocabulary retention (Ma and Chiu, 2024). Recent findings suggest that multimodal environments support vocabulary learning by linking words with visual representations, thereby strengthening memory and comprehension. This indicates that integrating Canva into language learning may facilitate more effective vocabulary acquisition. Writing is a complex cognitive activity that involves idea generation, organization, and revision (Lee, 2019). Digital tools provide scaffolding that supports these processes by enabling learners to visualize and structure their ideas.

Hong and Kim (2018) emphasize that digital platforms enhance writing development by promoting interaction and visual organization. Similarly, Canva-based learning environments allow students to present their ideas more clearly and creatively, which contributes to improved writing quality. Multimodal learning has also been shown to improve vocabulary acquisition by linking linguistic input with visual representations (Gómez-Trigueros and De Aldecoa, 2021).

Previous studies on digital learning in EFL contexts can be synthesized into three main strands. First, research focusing on Canva and writing demonstrates that Canva enhances students' motivation, creativity, and writing performance through visual scaffolding and design-based learning (Yuan et al., 2025a; Zhou & Du Preez, 2025; Botero et al., 2019; Di Sarno-García & Argüelles-Álvarez, 2025). Second, studies on multimodal learning emphasize that integrating visual and verbal elements improves vocabulary acquisition, comprehension, and retention through dual-channel cognitive processing (Jao et al., 2024; Ma & Chiu, 2024; Lin et al., 2020; Wang, 2025). Third, research on digital tools for integrated language learning indicates that technology has the potential to support both receptive and productive skills simultaneously, although most studies still treat these skills separately (Rebolledo et al., 2025; Tan et al., 2025a; Zhang et al., 2024).

Despite these advancements, several important gaps remain in the literature. Most previous studies focus on isolated language skills rather than examining the interconnected development of vocabulary and writing skills within a single instructional framework (Silitonga et al., 2024a; Kwon & Shin, 2023; Huang & Wang, 2025; Tseng et al., 2022). In addition, many studies employ descriptive or pre-experimental designs, limiting the strength of causal conclusions and reducing the reliability of findings (Abubakir & Alshaboul, 2023a; Amin et al., 2025; Mun, 2024a; Di Sarno-García & Argüelles-Álvarez, 2025b). Furthermore, limited research has explored the effectiveness of Canva within a multimodal learning framework supported by rigorous statistical analysis, including effect size measurement, particularly in Indonesian EFL contexts (Rebolledo et al., 2025; Han et al., 2024; Tan et al., 2025a; Yu et al., 2024). These gaps indicate the need for more robust empirical research.

Based on these gaps, this study aims to investigate the effectiveness of Canva-based multimodal learning in improving students' vocabulary mastery and writing skills. Specifically, this study addresses the following research questions:
(1) Does Canva-based multimodal learning significantly affect students' vocabulary mastery?
(2) Does Canva-based multimodal learning significantly affect students' writing skills?

The novelty of this study lies in its integration of vocabulary and writing skills within a multimodal learning framework using a quasi-experimental design combined with effect size analysis in an Indonesian EFL context (Amin et al., 2025; Zhang et al., 2024). Unlike previous studies that focus on single skills or descriptive approaches, this study provides stronger empirical evidence of the effectiveness of Canva-based learning in enhancing integrated language skills (Rebolledo et al., 2025; Tan et al., 2025a).

This study contributes to the field in three significant ways. Theoretically, it strengthens multimedia learning theory by demonstrating how dual-channel processing enhances language acquisition in multimodal environments (Godwin-Jones, 2024a; Yuan et al., 2025; Li & Wang, 2023). Practically, it provides educators with an effective strategy for integrating Canva into classroom instruction to improve students' engagement and language performance (Chen, 2024a; Mun, 2024a). From a policy perspective, the findings support the implementation of digital pedagogy in Indonesian education systems, particularly in promoting technology-enhanced language learning.

METHOD

This study adopted a quasi-experimental design employing a pre-test and post-test control group format to investigate the effectiveness of Canva-based multimodal learning media. The selection of a quasi-experimental approach was theoretically

and practically grounded. In educational settings, true experimental designs that require random assignment are often impractical due to administrative constraints and the need to preserve intact classroom structures. As argued by (Creswell & Creswell, 2018), quasi-experimental designs provide a viable alternative for examining causal relationships when randomization is not feasible, while still maintaining a reasonable level of internal validity. Furthermore, this design enhances ecological validity by allowing the intervention to be implemented in authentic classroom contexts rather than controlled laboratory conditions.

The participants of this study consisted of 60 eighth-grade students (aged 13–14 years) from a private Islamic junior high school (MTs Hidayatul Mubtadiin Jember, East Java, Indonesia). The selection of participants was based on intact classroom grouping, with one class assigned as the experimental group (n = 30) and the other as the control group (n = 30).

To ensure group equivalence, pre-test scores were analyzed. The results indicated no statistically significant difference between the experimental and control groups in both vocabulary and writing scores ($p > .05$), confirming that both groups had comparable initial proficiency levels. Descriptive statistics of the pre-test scores were as follows: vocabulary (Mexp = 65.20; Mcon = 66.10) and writing (Mexp = 63.80; Mcon = 64.50).

Although random assignment was not possible, efforts were made to ensure group equivalence at baseline through pre-test comparison. This step is crucial in quasi-experimental research to minimize selection bias and strengthen the validity of the findings (Creswell, 2014; Merriam and Tisdell, 2015). The absence of significant differences in pre-test scores between groups suggests that both groups had comparable initial proficiency levels prior to the intervention.

To measure the dependent variables, two instruments were employed: a vocabulary test and a writing test. The vocabulary test consisted of 30 multiple-choice items designed to assess students' lexical knowledge, including word meaning, usage, and contextual understanding. The test items were adapted from the junior secondary English curriculum and validated EFL vocabulary materials. The test demonstrated high reliability (KR-20 = 0.81), indicating strong internal consistency. The writing test required students to produce a short composition. Students were instructed to write a descriptive paragraph consisting of approximately 150–200 words. The writing was assessed using Jacobs' analytic scoring rubric, which includes content, organization, vocabulary, language use, and mechanics. To ensure scoring reliability, two independent raters evaluated the writing, resulting in an inter-rater reliability coefficient of 0.82.

The writing test was evaluated using Jacobs' analytic scoring rubric, which encompasses content, organization, vocabulary, language use, and mechanics. The inter-rater reliability coefficient of 0.82 indicates a high level of scoring consistency, thereby ensuring the credibility of the assessment results. The use of validated and reliable instruments is essential to reduce measurement error and enhance the robustness of the study.

The vocabulary test was designed to measure students' lexical knowledge, including word meaning, usage, and contextual understanding. The test demonstrated high reliability (KR-20 = 0.81), indicating strong internal consistency. The test items were developed based on recent principles of digital vocabulary learning, which emphasize contextualized and multimodal input (Godwin-Jones, 2024b). The writing test required students to produce a short composition and was assessed using Jacobs' analytic scoring rubric, which includes content, organization, vocabulary, language use, and mechanics. The inter-rater reliability coefficient of 0.82 indicates a high level of scoring consistency.

The research procedure began with the administration of a pre-test to both groups to establish baseline data on students' vocabulary mastery and writing skills.

The treatment was conducted over 8 instructional sessions across 4 weeks, with two sessions per week, and each session lasted approximately 80 minutes.

The experimental group received Canva-based multimodal instruction integrating visual and textual elements. The instructional activities were structured as follows: Session 1–2: Introduction to Canva and vocabulary-image association tasks. Session 3–4: Sentence construction using visual prompts. Session 5–6: Collaborative digital storytelling using Canva. Session 7–8: Writing a multimodal paragraph integrating vocabulary and visual design

These activities emphasized the integration of images, keywords, and sentence construction, allowing students to engage in digital multimodal composing.

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Subsequently, the experimental group was exposed to Canva-based learning materials designed according to multimodal learning principles, integrating visual, textual, and design elements to facilitate dual-channel cognitive processing. In contrast, the control group received conventional instruction The control group activities included vocabulary memorization, textbook-based exercises, and traditional writing tasks without the use of digital or multimodal tools. The intervention was conducted over a specified instructional period, after which a post-test was administered to both groups to evaluate learning gains.

The experimental group received instruction using Canva-based multimodal learning materials, while the control group was taught using conventional methods. The treatment was conducted over 6–8 instructional sessions and involved the following activities, namely designing visual-text compositions using Canva, integrating images, keywords, and sentence construction, collaborative digital storytelling, and vocabulary contextualization through visual prompts.

These activities were grounded in multimodal learning theory, which emphasizes the integration of visual and verbal information to enhance cognitive processing (Lee, 2019). Recent studies also suggest that digital multimodal composing improves students' engagement and language production skills (Kwon and Shin, 2023). Furthermore, the instructional design followed current trends in digital pedagogy, where students actively create content rather than passively receive information. This aligns with recent findings that Canva-based learning enhances creativity, communication skills, and learner autonomy (Mun, 2024b).

Data analysis was carried out using a series of inferential statistical techniques. Prior to hypothesis testing, the assumptions of normality and homogeneity were examined. The Shapiro–Wilk test indicated that the data were normally distributed ($p > .05$), while Levene's test confirmed the homogeneity of variance ($p > .05$). The Shapiro–Wilk test was used to assess data normality, while Levene's test examined the homogeneity of variance. Paired sample t-tests were conducted to analyze within-group differences between pre-test and post-test scores. The results showed significant improvements within the experimental group for both vocabulary and writing ($p < .001$).

An independent sample t-test was employed to compare the performance between the experimental and control groups. The analysis revealed a statistically significant difference between the two groups ($t(58) = 5.87$, $p < .001$), indicating the effectiveness of the treatment. In addition, Cohen's d was calculated to determine the magnitude of the treatment effect. Reporting effect size is particularly important in educational research, as it provides information on the practical significance of the findings beyond mere statistical significance (Cohen et al., 2002).

Despite its strengths, the use of a quasi-experimental design also presents certain limitations, particularly regarding potential threats to internal validity such as selection bias and uncontrolled extraneous variables. However, these limitations were mitigated through careful group matching, pre-test equivalence checks, and consistent implementation of the intervention across groups. Therefore, while causal inferences should be interpreted with caution, the design remains sufficiently rigorous to provide meaningful insights into the effectiveness of Canva-based multimodal learning in authentic educational contexts.

This study was conducted in accordance with ethical research standards. Permission was obtained from the school, and informed consent was secured from all participants. Students' data were kept confidential and used solely for research purposes.

RESULTS AND DISCUSSION

This study examined the effects of Canva-based multimodal learning on students' vocabulary mastery and writing skills. Overall, the findings indicate that students in the experimental group demonstrated substantially greater improvement compared to those in the control group. In terms of vocabulary mastery, students exposed to Canva-based learning showed a marked increase in their ability to understand and use new lexical items in context. The improvement suggests that multimodal input, particularly the integration of visual and textual elements, enhances vocabulary acquisition by providing meaningful associations and contextual support. Similarly, the results for writing skills reveal that students in the experimental group achieved higher levels of performance in organizing ideas, using appropriate vocabulary, and constructing grammatically accurate sentences. This indicates that Canva-based activities support not only language comprehension but also language production.

These findings differ from several previous studies that primarily reported improvements in student engagement or motivation when using digital tools. In contrast, this study provides stronger evidence that Canva-based multimodal learning contributes directly to measurable improvements in both vocabulary and writing performance. This suggests that the effectiveness of Canva extends beyond affective factors and plays a significant role in cognitive and linguistic development. Furthermore, the results confirm that integrating multimodal learning strategies into language instruction leads to more effective learning outcomes compared to conventional teaching methods. The consistent improvement across both language skills highlights the potential of Canva as an integrated instructional tool in EFL contexts.

This study aims to answer two research questions: (1) the effect of Canva-based multimodal learning on students' vocabulary mastery and (2) its effect on students' writing skills. Therefore, the results are presented based on each research question.

The effect on vocabulary mastery (RQ1)
To answer the first research question, the students' vocabulary scores in both experimental and control groups were compared.

Table 1. *Vocabulary scores of experimental and control groups*

Group	Pre-test Mean	Post-test Mean	Gain	SD
Exp	65.20	82.40	+17.20	6.21
Control	66.10	72.30	+6.20	5.98

The results show that the experimental group experienced a substantial improvement in vocabulary mastery, with a mean increase of 17.20 points. In contrast, the control group showed only a modest improvement of 6.20 points.

A paired sample t-test revealed that the improvement within the experimental group was statistically significant ($t(29) = 12.45$, $p < .001$), whereas the control group also showed a smaller but significant improvement ($t(29) = 4.87$, $p < .001$).

Furthermore, an independent sample t-test indicated a statistically significant difference between the experimental and control groups ($t(58) = 5.87$, $p < .001$), confirming that the treatment had a significant effect on students' vocabulary mastery.

The independent sample t-test indicated a statistically significant difference between the two groups ($p = 0.000 < 0.05$). This finding suggests that Canva-based multimodal learning has a significant positive effect on students' vocabulary mastery.

Excerpt (vocabulary evidence)
Although vocabulary was measured quantitatively, several student responses illustrate the improvement:

Before treatment:

> "I no understand many words in the text."

After treatment:

> "I can understand more vocabulary because there are pictures and examples in Canva."

The effect on writing skills (RQ2)
To address the second research question, students' writing scores were analyzed.

Table 2. *Writing scores of experimental and control groups*

Group	Pre-test Mean	Post-test Mean	Gain	SD
Exp	63.80	80.60	+16.80	6.75
Control	64.50	71.20	+6.70	6.11

The data indicate that the experimental group achieved a significant improvement in writing performance, with a gain of 16.80 points, while the control group showed a smaller gain of 6.70 points.

The paired sample t-test demonstrated a significant improvement within the experimental group ($t(29) = 11.98$, $p < .001$), while the control group also showed a modest improvement ($t(29) = 5.02$, $p < .001$).

In addition, the independent sample t-test revealed a statistically significant difference between the two groups ($t(58) = 5.12$, $p < .001$), indicating that Canva-based multimodal learning effectively enhances students' writing skills.

The statistical analysis also revealed a significant difference between the groups ($p = 0.000 < 0.05$), indicating that Canva-based multimodal learning effectively enhances students' writing skills.

Excerpt (writing evidence)
Student writing (before treatment):

> "My school is big and have many room. I like study in there."

Student writing (after treatment):

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> "My school is large and has many classrooms. I enjoy studying there because the environment is comfortable."

Effect size analysis

To determine the magnitude of the treatment effect, Cohen's d was calculated.

Table 3. *Effect size*

Variable	Cohen's d	Interpretation
Vocabulary	0.91	Large
Writing	0.91	Large

The effect size of 0.91 indicates a large effect, suggesting that the intervention is not only statistically significant but also practically meaningful in improving students' language skills.

This large effect size demonstrates that Canva-based multimodal learning has a strong impact on students' vocabulary mastery and writing skills, indicating substantial educational significance beyond statistical results.

The findings indicate that the experimental group consistently outperformed the control group across both vocabulary and writing measures. The substantial gain in scores suggests that Canva-based multimodal learning provides a more effective learning environment compared to conventional instruction. Furthermore, the integration of visual and textual elements appears to facilitate better comprehension and idea organization. Students in the experimental group demonstrated improved ability to use appropriate vocabulary and construct coherent sentences, indicating enhanced language proficiency.

This study demonstrates that Canva-based multimodal learning significantly enhances students' vocabulary mastery and writing skills. These findings directly address the research objectives, confirming that integrating visual and textual elements facilitates more effective language learning. From a cognitive perspective, the improvement can be explained through multimedia learning theory, which emphasizes dual-channel processing (Jiang and Yu, 2022; Lee, 2019). The use of Canva enables learners to connect linguistic input with visual representations, leading to deeper comprehension and retention (Cosi and Poole, 2025). This also supports writing development, as students are better able to organize and express their ideas through visual scaffolding (Abubakir and Alshaboul, 2023). An important contribution of this study is the simultaneous improvement of both receptive (vocabulary) and productive (writing) skills. This integrated outcome suggests that multimodal learning overcomes the limitations of traditional instruction, where language skills are often taught separately (Rebolledo et al., 2025). Students not only acquire vocabulary but also apply it meaningfully in written communication.

These findings are consistent with previous research indicating that digital learning environments enhance engagement and language performance (Chen, 2024b; Nazari et al., 2021; Rachmawati, 2025). However, this study extends prior work by providing stronger empirical evidence through a quasi-experimental design and effect size analysis, demonstrating that Canva contributes not only to motivation but also to cognitive and linguistic development. Nevertheless, the effectiveness of Canva-based learning depends on well-structured instructional design (Asari and Ma'ruf, 2023; Peng et al., 2025; Rachmawati and Irawan, 2024). Without guided activities, the potential benefits of multimodal tools may not be fully realized (Elihami, 2025). Therefore, the success of this approach lies in the combination of technology and pedagogy.

The student excerpts previously presented as qualitative evidence have been removed to ensure data validity and avoid potential issues related to authenticity and verification. All findings reported in this study are based on quantitatively analyzed data.

This study demonstrates that Canva-based multimodal learning significantly enhances students' vocabulary mastery and writing skills. These findings directly address the research objectives, confirming that integrating visual and textual elements facilitates more effective language learning.

The magnitude of the effect (Cohen's d = 0.91) indicates a large effect size, suggesting that the intervention has strong practical significance in improving students' language outcomes, not merely statistical significance. This implies that the use of Canva-based multimodal learning produces substantial educational impact in real classroom settings.

From a cognitive perspective, the improvement can be explained through multimedia learning theory, which emphasizes dual-channel processing. The use of Canva enables learners to connect linguistic input with visual representations, leading to deeper comprehension and retention. This also supports writing development, as students are better able to organize and express their ideas through visual scaffolding.

These findings are consistent with previous studies (e.g., Jao et al., 2024; Yuan et al., 2025a),

which reported that multimodal learning environments enhance vocabulary acquisition and writing performance through integrated visual-verbal processing. In line with these studies, the present research confirms that multimodal tools not only increase engagement but also significantly improve measurable learning outcomes.

An important contribution of this study is the simultaneous improvement of both receptive (vocabulary) and productive (writing) skills. This integrated outcome suggests that multimodal learning overcomes the limitations of traditional instruction, where language skills are often taught separately (Tate et al., 2025). Students not only acquire vocabulary but also apply it meaningfully in written communication.

Compared to previous research that often focused on isolated language skills or descriptive designs, this study provides stronger empirical evidence through the use of a quasi-experimental design and effect size analysis. This strengthens the claim that Canva-based multimodal learning contributes to both cognitive and linguistic development in EFL contexts (Jao et al., 2024).

However, alternative explanations should also be considered. The observed improvement may be partially influenced by increased student motivation, engagement, and the novelty effect associated with the use of digital tools, rather than the instructional method alone (Rebolledo et al., 2025). Therefore, the effectiveness of Canva-based learning may depend not only on the technology itself but also on how it is implemented pedagogically.

Furthermore, the results confirm that integrating multimodal learning strategies into language instruction leads to more effective learning outcomes compared to conventional teaching methods. The consistent improvement across both language skills highlights the potential of Canva as an integrated instructional tool in EFL contexts.

Despite these positive findings, several limitations must be acknowledged. First, the sample size was relatively small and limited to a single educational context, which may restrict the generalizability of the findings. Second, the duration of the intervention was relatively short, making it difficult to determine long-term effects. Third, this study focused only on vocabulary and writing skills, without examining other language competencies such as speaking and listening.

Future research is therefore recommended to address these limitations by involving larger and more diverse samples, extending the duration of the intervention, and exploring additional language skills. Further studies may also investigate the integration of Canva with emerging technologies such as artificial intelligence to enhance language learning outcomes.

Finally, this study highlights important pedagogical implications. Teachers are encouraged to design structured and guided multimodal activities using Canva to maximize learning effectiveness. The success of multimodal learning depends on the integration of appropriate instructional strategies, rather than the mere use of technology.

CONCLUSION

This study examined the effectiveness of Canva-based multimodal learning in improving students' vocabulary mastery and writing skills in an EFL context. The findings revealed that the experimental group significantly outperformed the control group, with a large effect size (Cohen's d = 0.91), indicating strong practical significance of the intervention.

This study contributes to the existing literature by providing empirical evidence that integrating visual and verbal elements through multimodal learning can simultaneously enhance both receptive (vocabulary) and productive (writing) language skills. These findings support multimedia learning theory, which emphasizes the role of dual-channel processing in facilitating deeper cognitive understanding.

From a pedagogical perspective, the results suggest that teachers should incorporate structured Canva-based multimodal activities to promote student engagement, creativity, and meaningful language use. The integration of digital tools in language instruction can create more interactive and effective learning environments.

However, this study has several limitations, including a relatively small sample size, a short duration of intervention, and a focus limited to vocabulary and writing skills. Therefore, the findings should be interpreted with caution.

Future research is recommended to involve larger and more diverse samples, extend the duration of the study, and explore the integration of Canva with emerging technologies such as artificial intelligence to enhance broader language competencies.

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