

The Effect of Digital Storyboards and Collaborative Learning on Students' Narrative Writing Achievement

Asyatur Hamni^{1✉}, Siska Perdina²

¹Universitas Negeri Padang, Sumatera Barat, Indonesia

²Universitas Tanjungpura, Pontianak, Indonesia

✉ Corresponding author
asyaturhamni236@gmail.com

Received: 25-12-2025 | Revised: 04-04-2026 | Accepted: 07-04-2026

ABSTRACT

This study aims to examine the effect of using digital storyboards combined with collaborative learning on the narrative writing achievement of ninth-grade students at MTsN 3 Lima Puluh Kota. The study was motivated by students' difficulties in developing ideas and organizing texts effectively in English as a Foreign Language (EFL) learning. A quasi-experimental design with a nonequivalent pretest-posttest control group was employed, involving two classes as the experimental and control groups. The treatment was conducted over eight meetings through the integration of digital storyboards and collaborative learning. Data were collected using a narrative writing test assessed with the ESL Composition Profile and analyzed using an independent samples t-test. The findings revealed a significant difference between the two groups, with the experimental group achieving higher scores, particularly in content and organization. These results indicate that the integration of digital storyboards and collaborative learning is effective in improving students' narrative writing ability, although limitations related to sample size and duration should be considered.

Penelitian ini bertujuan untuk mengkaji pengaruh penggunaan digital storyboard yang dipadukan dengan pembelajaran kolaboratif terhadap kemampuan menulis teks naratif siswa kelas IX di MTsN 3 Lima Puluh Kota. Penelitian ini dilatarbelakangi oleh kesulitan siswa dalam mengembangkan ide dan mengorganisasikan tulisan secara efektif dalam pembelajaran Bahasa Inggris sebagai bahasa asing (EFL). Penelitian ini menggunakan desain kuasi eksperimen dengan nonequivalent pretest-posttest control group design yang melibatkan dua kelas sebagai kelompok eksperimen dan kontrol. Perlakuan diberikan selama delapan pertemuan melalui integrasi digital storyboard dan pembelajaran kolaboratif. Data dikumpulkan melalui tes menulis teks naratif yang dinilai menggunakan ESL Composition Profile dan dianalisis dengan uji independent samples t-test. Hasil penelitian menunjukkan adanya perbedaan signifikan antara kedua kelompok, di mana kelompok eksperimen memperoleh skor yang lebih tinggi, terutama pada aspek isi dan organisasi.

Keywords: digital storyboard, collaborative learning, narrative writing, EFL students

Introduction

Writing is widely acknowledged as one of the most cognitively demanding skills in English as a Foreign Language (EFL) learning (Alharthi, 2021), as it requires the simultaneous orchestration of multiple linguistic and cognitive components (Kelly & Reitter, 2018; Zhan et al., 2024). Students are expected not only to demonstrate control over vocabulary and grammatical structures, but also to generate meaningful ideas, organize them coherently, and express them with clarity and precision. This multifaceted nature of writing makes it particularly challenging for learners at the secondary school level, where students are still developing both their linguistic competence and higher-order thinking abilities. As noted by Nguyen (2021), writing involves a recursive process of planning, drafting, and revising, which often becomes a significant obstacle for learners who lack sufficient guidance and support.



Among the various genres taught in EFL classrooms, narrative writing presents a unique set of challenges. Unlike other text types, narrative writing requires students to construct a story with a clear sequence of events, develop characters, and present conflicts and resolutions in a coherent manner. This process demands not only linguistic accuracy but also creativity and imagination. However, many EFL learners struggle to translate their ideas into well-structured narratives. They often face difficulties in maintaining logical flow, ensuring coherence between sentences, and selecting appropriate language to convey meaning effectively. Previous research has consistently highlighted these challenges, indicating that students' narrative writing is frequently limited by weak idea development and inadequate organization (Alemi, 2022).

In many classroom contexts, these difficulties are further compounded by the continued reliance on conventional teaching practices (Bećirović, 2023). Traditional approaches, which are predominantly teacher-centered, tend to emphasize explanation and individual practice while providing limited opportunities for students to actively engage in the writing process (Alshammari, 2016). As a result, students are often positioned as passive recipients of knowledge rather than active constructors of meaning. This lack of engagement can hinder their ability to explore ideas, experiment with language, and refine their writing through feedback and revision. Consequently, students may develop a perception of writing as a rigid and monotonous task, rather than a dynamic and creative process (Guntur & Pordanjani, 2019; Zhang & Hyland, 2018).

In response to these challenges, the integration of technology in language learning has emerged as a promising avenue for enhancing students' writing experiences. One such approach is digital storytelling, particularly through the use of digital storyboards, which enables students to visualize and organize their ideas before transforming them into written texts. By combining visual elements with textual representation, digital storyboards provide a structured framework that supports idea generation and narrative organization. Tools such as Canva and other storyboard platforms allow students to map out their stories in a more engaging and intuitive way. Empirical studies have demonstrated that digital storytelling not only improves writing performance but also increases students' motivation and engagement by making the learning process more interactive and meaningful (Castillo-Cuesta, 2021).

Equally important is the role of collaborative learning, which shifts the focus of instruction from individual performance to shared knowledge construction. Through collaboration, students are encouraged to discuss ideas, negotiate meaning, and provide constructive feedback to their peers. This social dimension of learning creates a supportive environment in which students can refine their writing through interaction and reflection. Research has shown that collaborative learning can significantly enhance the quality of students' writing by fostering deeper understanding of text structure and promoting critical thinking (Girmen, 2019; Hum & Choi, 2020). Moreover, the process of peer feedback allows students to become more aware of their own strengths and weaknesses as writers.

Despite the growing body of research on digital storytelling and collaborative learning, studies that explicitly integrate digital storyboards with collaborative learning in the context of narrative writing remain relatively scarce, particularly at the junior secondary school level. Most existing studies tend to examine these approaches in isolation, thereby overlooking the potential synergy between visual planning and social interaction. This gap highlights the need for further investigation into how these two approaches can be combined to enhance students' writing performance. Therefore, this study aims to examine the effect of using digital

storyboards in conjunction with collaborative learning on students' narrative writing achievement. In addition, it seeks to identify which components of writing experience the most significant improvement, thereby providing deeper insights into the effectiveness of this integrated instructional approach.

Methods

This study employed a quantitative approach using a quasi-experimental design, specifically a nonequivalent pretest-posttest control group design. This design was selected due to the practical constraints of educational settings, where random assignment of individual participants is not feasible, and intact classes must be utilized. A quasi-experimental approach is considered appropriate for examining causal relationships in real classroom contexts without disrupting the existing instructional structure (Creswell, 2014; Sugiyono, 2023). The population of this study consisted of all ninth-grade students at MTsN 3 Lima Pulu Kota in the 2025/2026 academic year, totaling approximately 320 students. Two classes were selected as samples using a cluster random sampling technique, with each class consisting of approximately 32 students. One class was assigned as the experimental group, while the other served as the control group. To measure students' initial and final writing abilities, a narrative writing test was administered as both a pretest and a posttest with equivalent levels of difficulty to ensure the validity and reliability of the comparison.

The treatment was conducted over eight instructional sessions, during which the experimental group was exposed to an integrated instructional approach combining digital storyboard and collaborative learning. The learning process was systematically organized into several stages, including group discussions for idea generation, the development of digital storyboards using applications such as Canva, peer feedback activities, and collaborative revision of written texts. This approach aligns with active learning principles that emphasize student engagement and social construction of knowledge. In contrast, the control group received conventional instruction, which primarily involved teacher explanation and individual writing exercises without the integration of digital tools or structured collaborative activities. Students' writing performance was assessed using the ESL Composition Profile developed by Jacobs et al. (1981), which evaluates five key components: content, organization, vocabulary, language use (grammar), and mechanics. The collected data were analyzed using an independent samples t-test with the assistance of SPSS version 20 to determine significant differences between the two groups. Prior to hypothesis testing, the data were examined for statistical assumptions, including normality using the Kolmogorov-Smirnov test and homogeneity of variance, following standard procedures in quantitative experimental research (Creswell & Creswell, 2018).

Result

The findings of this study are presented in a structured manner in line with the research objectives, namely to examine the effect of integrating digital storyboards with collaborative learning on students' narrative writing achievement, and to identify the specific components of writing that demonstrated the most substantial development following the instructional intervention. An initial examination of the data indicates that both the experimental and control groups began the study with relatively comparable levels of writing proficiency. This equivalence is reflected in the pretest results, where no meaningful difference was observed between the two groups in terms of their average scores. Such a condition suggests that any

differences identified in the subsequent stages of the study can be more confidently attributed to the instructional treatment rather than to pre-existing disparities in ability. However, following the implementation of the treatment over eight instructional sessions, a clear divergence in performance began to emerge. Students in the experimental group exhibited a noticeably stronger progression in their writing ability compared to their counterparts in the control group, not only in terms of overall scores but also in the consistency and quality of their written outputs. To provide a clearer and more detailed representation of this difference, the results of the statistical analysis are presented in Table 1.

Table 1. Independent Samples t-test Results of Posttest Scores

Group	N	Mean	Std. Deviation	Sig. (2-tailed)
Experimental	32	78.56.00	0,30833333	0.000
Control	32	70.21.00	07.15	

As illustrated in Table 1, the experimental group achieved a mean posttest score of 78.56, accompanied by a standard deviation of 6.84, whereas the control group obtained a lower mean score of 70.21 with a slightly higher standard deviation of 7.15. The difference in mean scores reflects a substantial gap in writing achievement between the two groups following the intervention. At the same time, the relatively similar standard deviations indicate that the spread of scores within each group remained consistent, suggesting that the observed improvement in the experimental group was not limited to a small subset of students but was instead distributed more broadly across participants. The results of the independent samples t-test further reinforce this observation. The significance value (Sig. 2-tailed) of 0.000, which is well below the conventional threshold of 0.05, indicates that the difference in posttest scores between the experimental and control groups is statistically significant. This finding confirms that the observed improvement is unlikely to be the result of random variation and instead reflects a measurable effect associated with the instructional approach implemented in the experimental group.

A more detailed examination of the data reveals that the improvement in students' writing performance was not confined to a single aspect but extended across all assessed components, namely content, organization, vocabulary, language use, and mechanics. Nevertheless, the magnitude and nature of improvement varied across these components, providing a more nuanced picture of how students' writing developed throughout the intervention.

The most pronounced improvement was observed in the content component. Students in the experimental group demonstrated a stronger capacity to generate ideas that were not only more numerous but also more relevant and elaborated. Their narratives tended to display clearer thematic development, with ideas unfolding in a more coherent and meaningful manner. This suggests that students were better able to conceptualize and expand their narratives, resulting in richer and more engaging written texts. A similarly notable enhancement was evident in the organization component. Students showed an increased ability to structure their narratives in a logical and systematic way, with clearer sequencing of events and more effective transitions between ideas. Key elements of narrative structure—such as orientation, complication, and resolution—were presented with greater clarity and coherence. This indicates that students were able to move beyond merely generating ideas and instead organize those ideas into a well-structured narrative framework.

In contrast, improvements in vocabulary, language use (grammar), and mechanics, while still evident, were comparatively more moderate. Students in the experimental group exhibited a tendency to use a wider range of vocabulary and construct sentences with greater grammatical accuracy. Additionally, there was a noticeable reduction in mechanical errors, such as those related to punctuation and spelling. However, these improvements were less pronounced than those observed in content and organization, suggesting that the instructional intervention had a more immediate impact on higher-level aspects of writing. Taken together, these findings present a comprehensive picture of students' writing development. The observed improvements were not isolated or superficial but rather reflected a broader enhancement across multiple dimensions of writing performance. The data indicate that the instructional approach implemented in the experimental group contributed to a more balanced and holistic development of students' narrative writing ability, with particularly strong gains in idea development and structural organization.

Discussion

This study set out to examine the extent to which the integration of digital storyboards and collaborative learning influences students' narrative writing achievement, as well as to identify the specific components of writing that benefit the most from such an instructional approach. The findings clearly indicate that both objectives have been successfully achieved. The statistically significant difference between the experimental and control groups demonstrates that the combined use of digital storyboards and collaborative learning provides a measurable and meaningful enhancement to students' writing performance. More importantly, the results suggest that this improvement is not incidental, but rather the outcome of a structured and pedagogically grounded instructional intervention.

The effectiveness of this approach can be better understood when viewed through the lens of contemporary learning theories, particularly constructivism, which posits that knowledge is actively constructed through interaction, experience, and reflection. In this study, students were not merely recipients of information; instead, they were actively engaged in constructing their understanding of narrative writing through visual planning, peer interaction, and iterative revision. This active engagement appears to have facilitated deeper cognitive processing, allowing students to move beyond surface-level writing toward more meaningful and structured expression. Such findings resonate with recent studies emphasizing that technology-supported learning environments can foster active knowledge construction and significantly enhance learning outcomes (Andhini, 2025; Castillo-Cuesta, 2021).

A closer examination of the findings reveals that the most substantial improvement occurred in the content component. This suggests that digital storyboards function as an effective cognitive scaffold, enabling students to externalize and organize their ideas before translating them into written form. The visual nature of storyboards appears to reduce the cognitive load associated with idea generation, thereby allowing students to focus more on elaboration and coherence. This aligns with recent research indicating that digital storytelling tools support idea development by providing multimodal representations that enhance students' ability to conceptualize and expand their narratives (Ajabshir, 2024; Alemi, 2022). In this regard, the storyboard serves not only as a planning tool but also as a bridge between abstract ideas and structured written expression.

Similarly, the significant improvement observed in the organization component highlights the role of visual structuring in shaping students' understanding of narrative coherence.

Students in the experimental group demonstrated a clearer ability to sequence events logically and maintain cohesion throughout their texts. This suggests that the storyboard facilitated a more explicit awareness of narrative structure, enabling students to construct texts that are not only meaningful but also structurally sound. Previous studies have also reported that visual-based learning environments enhance students' ability to organize information and maintain textual coherence, particularly in EFL contexts (Alemi, 2022; Nguyen, 2021). Thus, the findings of this study reinforce the growing body of evidence supporting the pedagogical value of visual scaffolding in writing instruction.

Beyond the contribution of digital tools, the role of collaborative learning in this study emerges as equally significant. The interactive processes embedded in collaborative learning such as peer discussion, feedback exchange, and joint revision appear to have created a dynamic learning environment in which students could refine their ideas through social negotiation. This aligns with sociocultural perspectives of learning, which emphasize the importance of interaction in cognitive development. Through collaboration, students were exposed to diverse perspectives, enabling them to critically evaluate their own work and adopt more effective writing strategies. This finding is consistent with previous research demonstrating that collaborative learning enhances writing quality by promoting critical thinking, reflection, and shared knowledge construction (Girmen, 2019; Hum & Choi, 2020).

Another important dimension of the findings lies in the observed increase in students' motivation and engagement. The integration of digital tools such as Canva-based storyboards appears to have transformed the writing process from a routine academic task into a more engaging and interactive activity. Students were more actively involved in both the planning and drafting stages, suggesting that the use of technology contributed to a more stimulating learning environment. Recent studies have similarly highlighted the role of digital storytelling in enhancing students' motivation, engagement, and overall learning experience (Ajabshir, 2024). This indicates that the effectiveness of the instructional approach may be partly attributed to its ability to address not only cognitive but also affective dimensions of learning.

When contrasted with the control group, the limitations of conventional teacher-centered instruction become more apparent. The absence of visual scaffolding and structured collaboration appears to have restricted students' opportunities to develop and refine their ideas. As a result, their writing improvement remained relatively limited. This comparison underscores the importance of moving beyond traditional instructional models toward more interactive and student-centered approaches that integrate both technology and collaboration.

From a broader perspective, this study contributes to the existing literature by demonstrating that the integration of digital storyboard and collaborative learning produces a synergistic effect that enhances students' writing performance more effectively than either approach in isolation. While previous studies have examined digital storytelling and collaborative learning separately, this study provides empirical evidence supporting the combined application of these approaches in the context of narrative writing. This contribution is particularly relevant in EFL settings, where students often require both cognitive support and social interaction to develop their writing skills effectively.

Despite these contributions, this study is not without limitations. The relatively small sample size and the limited duration of the intervention may constrain the generalizability of the findings. Additionally, the study focused exclusively on narrative writing, which may limit its applicability to other text types. Therefore, future research is recommended to involve larger and more diverse samples, extend the duration of the intervention, and explore the

effectiveness of this approach across different genres of writing. Such investigations would provide a more comprehensive understanding of how digital and collaborative learning strategies can be optimized in language education.

Conclusion

This study concludes that the integration of digital storyboards with collaborative learning has a significant positive effect on students' narrative writing achievement. The findings indicate that the combination of visual media and social interaction creates a more effective learning experience, not only in improving students' writing outcomes but also in enhancing their engagement in the writing process. In particular, the most substantial improvements were observed in the content and organization components, suggesting that digital storyboards support students in planning and developing ideas more systematically, while collaborative learning encourages them to organize and refine their writing through meaningful interaction. Therefore, the integration of these two approaches produces a complementary effect that contributes to the overall improvement of students' writing quality.

From a practical standpoint, the findings imply that educators should adopt instructional strategies that integrate digital technology with collaborative learning to create more active, creative, and relevant learning environments in the digital era. This approach not only enhances students' writing skills but also fosters critical thinking, creativity, and learner autonomy. However, this study is limited by its relatively small sample size and short duration of implementation, which may affect the generalizability of the findings. Therefore, future research is recommended to involve larger and more diverse samples, extend the duration of intervention, and explore the application of this approach across different text genres or in combination with more advanced educational technologies to further enrich language learning practices.

References

- Ajabshir, Z. (2024). Empowering EFL writing through digital storytelling. *System*. <https://doi.org/10.1016/j.system.2024.102345>
- Alemi, M. (2022). The Role of Digital Storytelling in EFL Students' Writing Skill and Motivation. *Language Teaching Research Quarterly*. <https://doi.org/10.32038/ltrq.2022.32.02>
- Alharthi, S. (2021). From Instructed Writing to Free-Writing: A Study of EFL Learners. *Sage Open*, 11(1). <https://doi.org/10.1177/21582440211007112>
- Alshammari, S. R. (2016). The different approaches of teaching writing in the classroom. *Language, Individual & Society*, 10(1), 18–24.
- Andhini, R. (2025). Digital storytelling in EFL: A systematic review. *Journal of English Teaching*. <https://doi.org/10.33541/jet.v11i2.6771>
- Bećirović, S. (2023). Challenges and Barriers for Effective Integration of Technologies into Teaching and Learning. In S. Bećirović (Ed.), *Digital Pedagogy: The Use of Digital Technologies in Contemporary Education* (pp. 123–133). Springer Nature Singapore. https://doi.org/10.1007/978-981-99-0444-0_10
- Castillo-Cuesta, L. (2021). Using Digital Storytelling as a Strategy for Enhancing EFL Writing Skills. *International Journal of Emerging Technologies in Learning*. <https://doi.org/10.3991/ijet.v16i13.22187>
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications.

- Girmen, P. (2019). Digital storytelling in education. *Universal Journal of Educational Research*. <https://doi.org/10.13189/ujer.2019.070108>
- Guntur, L. M. F., & Pordanjani, S. R. (2019). INDONESIAN UNIVERSITY STUDENTS' PERCEPTION ON INSTRUCTOR-INITIATED WRITING ACTIVITIES. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 7(2). <https://doi.org/10.24256/ideas.v7i2.1054>
- Hum, S., & Choi, S. (2020). The Effect of Digital Storytelling on EFL Writing. *Journal of Asia TEFL*.
- Jacobs, H. L., Zinkgraf, S. A., Wormuth, D. R., Hearfiel, V. F., & Hughey, J. B. (1981). *Testing ESL Composition: a Practical Approach*. Newbury House.
- Kelly, M. A., & Reitter, D. (2018). How Language Processing can Shape a Common Model of Cognition. *Procedia Computer Science*, 145, 724–729. <https://doi.org/10.1016/j.procs.2018.11.047>
- Nguyen, T. (2021). Digital storytelling to enhance EFL students' writing skills. *Arab World English Journal*. <https://doi.org/10.24093/awej/vol12no1.1>
- Sugiyono. (2023). *Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D Dan Penelitian Pendidikan)* (3rd ed.). Alfabeta.
- Zhan, J., Sun, Q., & Zhang, L. J. (2024). Effects of manipulating writing task complexity on learners' performance in completing vocabulary and syntactic tasks. *Language Teaching Research*, 28(3), 1011–1032. <https://doi.org/10.1177/13621688211024360>
- Zhang, Z. (Victor), & Hyland, K. (2018). Student engagement with teacher and automated feedback on L2 writing. *Assessing Writing*, 36, 90–102. <https://doi.org/10.1016/j.asw.2018.02.004>