

The Impact of Online Collaborative Writing Strategy via Google Docs on Senior High School Learners' Writing Performance in Composing Narrative Texts

Aisyah Zahrok

aisyah.21042@mhs.unesa.ac.id

Universitas Negeri Surabaya, Indonesia

Eva Rahmawati

evarahmawati@unesa.ac.id

Universitas Negeri Surabaya, Indonesia

Article History:

Received: 18 July 2025

Accepted: 26 December 2025

Corresponding Author:

aisyah.21042@mhs.unesa.ac.id

Keywords:

collaborative writing; narrative texts; Google Docs; EFL learners; sociocultural theory

Improving EFL learners' narrative writing remains a persistent challenge, particularly when instruction relies heavily on individual writing tasks that limit peer interaction and cognitive engagement. Recent pedagogical debates underscore the need for socially interactive approaches to writing, which are supported by digital technologies. Grounded in Vygotsky's Sociocultural Theory—particularly the Zone of Proximal Development—this study explores the use of collaborative writing via Google Docs as a means of scaffolding learners' writing performance. A quasi-experimental design was conducted with two tenth-grade classes in Indonesia: an experimental group that used Google Docs collaboratively and a control group that received conventional instruction. Writing performance was assessed using an analytical rubric encompassing content, style, language use, organization, and mechanics. The results revealed that the experimental group achieved

significant improvements, particularly in content development, organizational coherence, and language accuracy. The findings underscore that collaborative writing supported by digital tools and sociocultural learning principles contributes meaningfully to the development of learners' narrative writing performance. Accordingly, it is recommended that EFL educators adopt technology-mediated collaborative writing strategies to facilitate more interactive, engaging, and pedagogically sound writing instruction.

INTRODUCTION

Writing is an activity which requires individuals to express, organize, and draw up their thoughts or ideas in a structured way. It serves as a powerful tool for generating, exploring, investigating, questioning, working on, analyzing, and organizing ideas and knowledge (Toprak & Yücel, 2020). Besides, writing is a fundamental skill with significant relevance across various aspects of life, serving not only as a means of personal communication but also as a tool for conveying information, narrating experiences, and articulating ideas (Tusino et al., 2022). Nevertheless, writing has long been considered as the most arduous and demanding aspect of language learning, particularly when undertaken in a foreign language, posing challenges for all learners without exception (Jabali, 2018). This difficulty arises because writing has traditionally been viewed as a solitary activity, requiring writers to work independently without immediate feedback or collaboration (Savasci & Kaygisiz, 2019; Storch, 2019). Additionally, the difficulty of writing in a foreign language is further compounded by the absence of reciprocal interactions with readers (Valizadeh, 2022). Consequently, this lack of interaction makes it harder for learners to refine their ideas and enhance clarity in their writing.

Furthermore, in the Indonesian context, both teachers and learners encounter significant challenges in the teaching and learning process of writing. For instance, teachers face both internal and external challenges consisting of internal factors that stem from learners themselves, including native language interference (Indonesian), English proficiency (such as grammar knowledge and vocabulary mastery), motivation, and reading habits, while external factors relate to the availability of teaching resources, classroom conditions, and time constraints (Hidayati, 2018). Additionally, other seven key challenges in teaching English writing have been identified: first, learners struggle with grammatical competence, particularly in applying correct tenses and structuring their ideas; second, they find it difficult to develop and organize ideas logically; third, limited vocabulary knowledge hinders their ability to understand and use words accurately; fourth, low motivation often leads to reluctance in completing tasks and following instructions; fifth, time limitations reduce opportunities for teachers to explain writing concepts in depth; sixth, the lack of varied and relevant resources hinders effective instruction; and seventh, inadequate teaching facilities—such as limited access to dictionaries and projectors—pose further obstacles (Amalia et al., 2021).

Building on the issue of learners' difficulties with writing, several contributing factors have also been identified, including the continued application of traditional instructional methods, particularly the product-oriented approach, the absence of written corrective feedback from teachers, and insufficient motivation given for learners to practice writing both in and outside the classroom. These conditions contribute to learners' lack of writing practice, reduce interest and concentration, and develop negative attitudes toward writing (Luan et al., 2024). Additionally, learners' writing difficulties may also arise from misconceptions about writing, which can cause them to view it as difficult and uninteresting; limited experience, which hinders the development of necessary writing skills; and negative self-perception, which can lower their confidence and discourage further improvement (Kemalsyah et al., 2022). While various factors make writing difficult for learners, strong writing skills are essential for academic success, as they support

effective communication in learning and assessment (Tusino et al., 2022). Besides, as learners move into higher education and the workplace, the ability to express ideas clearly in writing becomes increasingly vital (Tusino et al., 2024).

In the meantime, the Indonesian senior high school curriculum requires tenth-grade learners to develop writing skills by categorizing texts into fiction and non-fiction types, including descriptive, exposition, procedure, report, recount, and narrative texts, in accordance with Learning Outcome Phase E (Badan Standar, Kurikulum, dan Asesmen Pendidikan, 2022). Through this learning process, learners not only develop their ability to organize ideas but also enhance their understanding of social functions, generic structures, and linguistic features specific to each type of the text. By acquiring this knowledge, learners are expected to differentiate between various text types and construct well-structured, linguistically appropriate texts aligned with their communicative purposes. Nonetheless, a preliminary investigation at the school where the study was conducted revealed that learners frequently face challenges in brainstorming, organizing ideas, managing time effectively, and maintaining grammatical accuracy, which often results in incomplete and linguistically flawed writing tasks.

Among the text types taught at the senior high school level, narrative writing appears to be one of the most challenging for learners, particularly in relation to grammatical accuracy and text organization or generic structure. For instance, Muliani et al. (2019) analyzed the challenges faced by ninth-grade learners in writing narrative texts and discovered that 40% had difficulty constructing the generic structure, typically omitting one component. Moreover, they showed that 50% struggled with using key language features such as past tense, direct speech, pronouns, nouns, and verbal processes. Furthermore, Labira (2023) reported that learners faced various challenges in writing narrative texts, with grammatical issues emerging as the most significant, followed by difficulties in mechanics, vocabulary, content development, and organization. In another related research, Helmiyadi & Kamaliah (2021) found that learners encountered significant challenges in writing

narrative texts, particularly in grammatical aspects such as verb tense, article usage, and sentence structure.

In response to those challenges, sociocultural theory, as proposed by Vygotsky (1978) provides a strong foundation that can be used for addressing learners' writing challenges through collaborative writing (CW) by promoting or highlighting natural learning development through interaction among community members. Following this theory, learners can moderate the learning performance of one another as peers during their task completion, either directly or indirectly (Rahimi & Fathi, 2022). The occurrence of social interaction can also have an impact on cognitive and linguistic development (Vygotsky, 1978). Moreover, Rahimi & Fathi (2022) stated that learners can jointly produce L2 skills and attain a potential level of their zone of proximal development (ZPD) to control cognitive functions through social interaction. The ZPD highlights the gap between a learner's current ability and potential, suggesting that learning occurs when instruction or assistance aligns with their developmental potential (Storch, 2019). Additionally, collaborative work can make group members actively participate in discussions, motivate one another to share ideas on the writing topic, provide feedback, and enhance their involvement in problem-solving activities (Afrezah et al., 2024).

Furthermore, many researchers worldwide were captivated by CW, encouraging investigations into whether it produces better outcomes compared to individual writing (Pham, 2021). Besides, CW has also become a widely adopted and effective instructional practice in L2 classrooms over the past few decades (Li, 2018). Additionally, introducing CW to writing courses in pairs or small groups can resolve the exaggerated workloads that teachers experience in the grading process (Coffin, 2020). These workloads can generate unproductive learning outcomes, such as when they have to provide comments or give marks on individual papers with multiple drafts for several learners, which is time-consuming. Therefore, teaching writing is highly suggested by implementing CW strategy as a practical teaching method (Fernández Dobao, 2012; Helaluddin et al., 2023; Storch, 2011). However, teachers still have to play their role as a guide, helper, or supervisor to assist learners

in completing CW assignments and interceding challenges or conflicts during collaboration (Wang, 2019). Accordingly, CW can be implemented to support the learning process and offer positive effects for both learners and teachers.

In recent years, CW where learners compose each part of their writing task jointly, has attracted much attention from several researchers (Albeshier, 2024; Calzada & García Mayo, 2020; Helaluddin et al., 2023; Pham, 2021; Rahimi & Fathi, 2022; Villarreal & Gil-Sarratea, 2020). This attraction arises from two main reasons, namely the collaborative nature of workplace writing, where assignments are typically accomplished in teams instead of independently, and the influence of Web 2.0 tools like *Google Docs*, *Wikis*, or *Blogs*, which have changed literacy practices (Storch, 2019). Furthermore, CW can best be integrated in a learner-centered learning environment to assist them in identifying or addressing writing performance gaps and constructing their writing drafts together (Rahimi & Fathi, 2022). Through CW, learners can have the opportunity to directly obtain corrective feedback from their peers or group members, which can improve their writing quality. Nevertheless, constructing a learner-centered learning environment in CW gives additional problems, such as limitation of time or other administrative obstructions (Ebadi & Rahimi, 2017; McLoughlin & Lee, 2007). However, the presence of online interaction devices and advanced internet technology can overcome these challenges.

Nowadays, learners are born in a world supported by technology, in which they prefer processing information through accessible modes, instant feedback, and fascinating activities (Alwahoub et al., 2022). Hence, several studies have recently been conducted to integrate innovative ideas between CW and technology Web 2.0 application tools, including *Google Docs*, *Blogs*, or *Wikis*, in writing tasks to overcome time limitations and improve learners' writing performances (Abrams, 2019; Albeshier, 2024; Alwahoub et al., 2022; Cengiz, 2022; Fathi et al., 2021; Kılınç & Yüksel, 2024; Ojha & Acharya, 2021; Rahimi & Fathi, 2022). These substantial efforts have been undertaken in teaching English writing, aiming to attain social interaction during web-based education and increase learners' overall writing

and language skills (Alwahoub et al., 2022). Additionally, online collaborative writing (OCW) has emerged as a promising area of research, supported by its characteristics of interactivity, reflective composition, and flexibility in terms of time and location (Li, 2018). Furthermore, several studies have reported numerous advantages of implementing collaborative writing through *Google Docs*, such as evolving individual writing performance (Alwahoub et al., 2022; Fathi et al., 2021; Zioga & Bikos, 2020) enhancing learners' writing self-regulation (Fathi et al., 2021), extending learning opportunities (Zhang, 2018), and supporting writing instruction through feedback from teachers or peers, drafting, editing, and peers response to feedbacks focusing on local and global mistakes (Alharbi, 2020).

In the long run, several teachers generally apply collaboration, whether in pairs or groups, during L2 speaking and reading classrooms (Savasci & Kaygisiz, 2019). Then, collaboration on writing appears to be well supported theoretically, and there has been a greater interest in L2 writings for many years, but research in an EFL context emerged to exist on a limited number (Mutwarasibo, 2013; Savasci & Kaygisiz, 2019; Storch, 2011). In addition, the adaption of *Google Docs* in teaching writing remains more under-researched to the same extent as other Web 2.0 tools (Ebadi & Rahimi, 2017). Furthermore, most research examining CW focuses on opinion, argumentative, and descriptive texts, whether at the tertiary or secondary level (Helaluddin et al., 2023; Kılınç & Yüksel, 2024; Masuara et al., 2022; Pham, 2021; Rezeki & Rahmani, 2021). Meanwhile, limited research has been conducted on the integration of CW and *Google Docs* at the secondary school setting, specifically in the context of composing narrative texts. For this reason, this study aims to shed more light and thoroughly investigate the potential impacts of implementing online collaborative writing strategy via *Google Docs* on the narrative text writing performances of tenth-grade EFL learners.

METHOD

A quasi-experimental approach was adopted in this study to explore the impact of an online collaborative writing strategy via Google Docs on EFL learners' narrative writing performance. This design is suitable for educational settings when conducting a randomized controlled trial is impractical because of logistical constraints (Ary et al., 2019). In this approach, two intact classes were involved: one served as the experimental group receiving online collaborative writing instruction via Google Docs, while the other acted as the control group completing the same tasks individually using Microsoft Word. The administration of pre- and post-tests enabled the researcher to assess development in learners' writing performance and to determine whether the observed differences were attributable to the collaborative writing intervention. Additionally, this research design is grounded in sociocultural theory, particularly Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD), which suggests that learners develop cognitive and linguistic abilities more effectively through social interaction, mediation, and scaffolding. In this study, Google Docs served as a collaborative tool that enabled peer negotiation and co-construction of knowledge, aligning with the core principles of sociocultural learning theory. This approach is also supported by earlier research emphasizing the role of collaborative writing in facilitating interaction and language development in EFL contexts (Storch, 2013; Wang, 2019).

This study involved a total of 68 tenth-grade learners, aged between 15 and 16 years, who were enrolled at a public senior high school located in Tuban, East Java, Indonesia. The school has a total tenth-grade learner population of approximately 170, from which the sample was drawn. Two intact classes—Class X-1 and Class X-3—were selected to participate in the study, as involving the entire population in an experimental design would have been impractical in terms of time, cost, and manageability. This research employed non-probability purposive sampling, relying on the teacher's professional judgment to determine which classes were most appropriate to be assigned as the experimental and control groups. Purposive sampling is considered appropriate when researchers intend to include

participants who share relevant characteristics aligned with the research objectives (Cohen et al., 2017). In this case, Classes X-1 and X-3 were chosen due to their comparable English proficiency and similar challenges in writing, particularly in grammar and idea development. Class X-1 (n = 34) was assigned as the experimental group and received the treatment using online collaborative writing via Google Docs, while Class X-3 (n = 34) served as the control group and completed individual writing tasks using Microsoft Word. Both groups obtained instruction from the same English teacher, adhering to the same syllabus and textbook, ensuring consistency in instructional content and learning objectives.

The data were collected through narrative writing tasks assigned as both a pre-test and a post-test. Each test was administered under a 40-minute time limit, with prompts designed to reflect the structure and demands of IELTS Writing Task 2, which emphasizes coherence, organization, and appropriate language use. The writing tasks specifically asked learners to compose fable—a subgenre of narrative texts that align with the tenth-grade curriculum and allow for clear story segmentation (orientation, complication, and resolution).

Furthermore, learner performance was assessed using a 100-point analytical rubric adapted from Wang et al. (2024) and Derewianka & Jones (2016), whose work informed the genre-based criteria used in the assessment. The rubric developed by Wang et al. (2024) builds upon several established writing assessment frameworks, including those by Brown & Bailey (1984), (Jacob et al., 1981), and Hajimaghsoodi & Maftoon (2020). The rubric evaluated five writing components: (1) content, which carried the highest weight at 30 points; (2) style, valued at 20 points; (3) language use, contributing 25 points; (4) organization, allocated 20 points; and (5) mechanics, accounting for the remaining 5 points. To ensure the validity and contextual relevance of the instruments, both the writing test and the scoring rubric were evaluated through expert validation.

Moreover, to support the reliability of the scoring process, two independent raters were involved in evaluating the learners' written texts using the validated rubric. This step was necessary due to the subjective nature of writing assessment, making rater consistency essential for reliable scoring. Therefore, inter-rater reliability was evaluated to ensure the extent of agreement in scoring learners' narrative writing. To achieve this, Cohen's kappa was employed—a statistical measure commonly used to assess inter-rater agreement for categorical or scaled data (McHugh, 2012). Two raters with relevant academic backgrounds and teaching experience independently assessed learners' writing samples through blind scoring. The resulting kappa scores were .755 for the pre-test and .734 for the post-test, which—based on McHugh's (2012) interpretation—indicate a moderate level of agreement.

The data collection procedure followed the process approach to writing which emphasizes the connection between writing tasks and learners' experiences while enhancing their understanding of the writing process (Tjalla, 2016). This approach emphasized planning ideas, composing drafts, engaging in peer or teacher feedback, and revising texts to develop writing as a recursive process. To establish baseline performance, both groups undertook a pre-test before the implementation of the intervention.

The experimental group participated in seven writing sessions that incorporated online collaborative writing through Google Docs, with learners working in small groups of 4-5 members. Each session was designed to guide learners through a series of structured stages aligned with the process approach to writing, including:

1. Generating ideas collaboratively and setting up a shared Google Docs file,
2. Organizing ideas together by developing an outline,
3. Writing the initial draft jointly within the shared document,
4. Exchanging peer feedback focused on five key writing components,
5. Revising the text based on peer input,

6. Consulting with the teacher prior to final revisions, and
7. Submitting the final completed draft

These stages incorporated key aspects of collaborative dialogue and peer scaffolding as outlined in sociocultural theory (Storch, 2013; Wang, 2019), enabling learners to co-construct texts and negotiate meaning through peer interaction. Learners were first trained in Google Docs functions and feedback strategies before engaging in group writing both inside and outside class. On the other hand, the control group performed the same kind of writing assignments independently using Microsoft Word, following a comparable process without peer collaboration or the use of online tools. This ensured that the only variable between groups was the presence or absence of collaboration via Google Docs. Following the treatment sessions, both groups completed a post-test narrative writing task using the same prompt format as the pre-test but based on different fable topics. To ensure fairness in assessment, these topics had been validated by an expert to ensure they were equivalent to the pre-test in terms of relevance and level of difficulty.

An analysis was carried out on the pre- and post-test scores using SPSS program version 22. To examine whether the data followed a normal distribution, the Shapiro–Wilk test was applied, while Levene’s test was employed to assess the homogeneity of variances. Since the data met both assumptions, an independent samples *t*-test was undertaken to determine whether the treatment led to a significant difference in writing performance between groups. To determine the magnitude of the observed effects, effect size calculations were calculated as part of the analysis using the eta squared formula (η^2), following interpretation guidelines by Cohen (1988).

FINDINGS AND DISCUSSIONS

FINDINGS

Prior to conducting the independent t -tests, assumption tests were carried out to ensure the data met the parametric requirements. The Shapiro–Wilk test revealed that the score distributions for all groups conformed to normality, as none of the p -values fell below the .05 threshold. Moreover, the analysis assessing variance equality—using Levene's Test procedure—demonstrated that the findings did not indicate any statistically significant variation between the experimental and control groups for both the pre-test ($F(1, 66) = 0.680, p = 0.413$) and the post-test ($F(1, 66) = 1.126, p = 0.293$). These outcomes confirm that the data satisfied the assumptions of normal distribution and equal variances, thereby validating the implementation of the independent samples t -test in this study. Table 1 provides a detailed account of the full results.

Table 1. Results of Normality and Homogeneity Tests

Test Type	Group	Statistic/F	df	Sig. (p -value)
Shapiro Wilk	Pre-test (Experiment)	.962	34	.274
	Post-test (Experiment)	.964	34	.313
	Pre-test (Control)	.949	34	.113
	Post-test (Control)	.944	34	.082
Levene's Test	Pre-test (Exp vs Con)	.680	(1, 66)	.413
	Post-test (Exp vs Con)	1.126	(1, 66)	.293

After confirming that the data met these assumptions, descriptive statistics were calculated to recapitulate the pre-test and post-test scores of both groups. The descriptive statistics summarizing learners' writing performance are shown in Table 2.

Table 2. Descriptive Overview of Pre and Post-Test Writing Performance

Task Type/Group	N	Min	Max	Mean	Std. Deviation
Pre-Test_Experimental	34	74	86	80.44	3.439
Post-Test_Experimental	34	78	90	84.06	3.516
Pre-Test_Control	34	75	87	81.06	3.219
Post-Test_Control	34	75	89	82.21	3.313

As presented in Table 2, the experimental and control groups revealed comparable mean scores at the pre-test stage, with the experimental group achieving a mean score of 80.44 and the control group acquiring a mean of 81.06. Following the implementation of the treatment, both groups showed an increase in their post-test scores. The mean score of the experimental group increased to 84.06, whereas the control group's mean score increased slightly to 82.21. These descriptive results suggest a more substantial improvement in writing performance among learners in the experimental group, with a mean gain of 3.62 compared to 1.15 in the control group. However, descriptive statistics alone do not provide sufficient evidence to evaluate whether the observed differences hold statistical significance. Accordingly, an independent samples *t*-test was applied to explore whether the observed differences in mean scores between two groups reached statistical significance.

To statistically confirm the similarity in writing performance between the experimental and control groups before the treatment, Table 3 displays the results of the independent samples *t*-test conducted on the pre-test scores.

Table 3. Pre-Test: Group Statistics

Group	N	Mean	Std. Deviation	Std. Error Mean
Experimental	34	80.44	3.439	.590
Control	34	81.06	3.219	.552

Table 4. Pre-Test: Independent Samples *t*-test Results

	<i>t</i> (df)	<i>Sig.</i> (2-tailed)	Mean Difference	Std. Error Difference	95% <i>CI</i>	
					Lower	Upper
equal variances assumed	-0.765 (66)	.447	-0.618	0.808	-2.231	0.995

With the assumption of equal variances met, the statistical test revealed that the difference between the groups was not significant, $t(66) = -0.765$, $p = .447$, suggesting that both groups had a comparable level of writing performance at the outset. In the context of an independent sample *t*-test, a *p*-value greater than .05 suggests that the difference in means is not statistically significant, meaning any observed difference is likely due to chance rather than an accurate effect. Conversely, a *p*-value less than or equal to .05 suggests a statistically significant difference (Pallant, 2011). Hence, this result confirms the homogeneity of the groups in the initial stage of the study and supports the validity of the subsequent comparison of post-test results.

Additionally, following the intervention session, a statistical comparison using an independent samples *t*-test was performed to assess if the two groups exhibited a statistically notable difference in their post-test writing performance. The experimental group participated in collaborative writing using Google Docs, whereas the control group performed the writing tasks through Microsoft Word independently. The results of the analysis are outlined in Table 5.

Table 5. Post-Test: Group Statistics

Group	N	Mean	Std. Deviation	Std. Error Mean
Experimental	34	84.06	3.516	.603
Control	34	82.21	3.131	.537

Table 6. Post-Test: Independent Samples *t*-test Results

	<i>t</i> (df)	<i>Sig.</i> (2-tailed)	Mean Difference	Std. Error Difference	95% <i>CI</i>	
					Lower	Upper
equal variances assumed	2.295 (66)	0.025	1.853	.807	.241	3.465

The analysis yielded a *p*-value of 0.025, which is below the conventional significance threshold of .05. This result indicates that a distinction in post-test scores exists between the two groups is statistically significant and not likely due to random variation. As shown in the results, the experimental group achieved higher scores ($M = 84.06$, $SD = 3.5$) than the control group ($M = 82.21$, $SD = 3.1$), with a significant difference identified by the *t*-test, $t(66) = 2.295$, $p = .025$. The mean difference of 1.853 was statistically significant, with the *CI* at the 95% level spanning from 0.241 to 3.465.

To further interpret the practical significance of this result in greater detail, the effect size was also calculated using eta squared formula, resulting in $\eta^2 = 0.074$. According to Cohen's (1988) guidelines —where an effect size of approximately 0.2 is regarded as small, 0.5 as moderate, and 0.8 or above as large—this result indicates a moderate effect. These results suggest that the integration of online collaborative writing using Google Docs had a meaningful impact on learners' narrative writing performance in composing fables. Therefore, the alternative hypothesis (H_1) is supported, providing evidence of the treatment's effectiveness.

Moreover, to gain a clearer understanding of this improvement, the pre-test and post-test mean scores of the experimental group were compared across five key writing components: content, style, language use, organization, and mechanics. The following Table 7 presents a comparison of the mean scores, mean difference, and *p*-value for each writing component in both the experimental and control groups between the two testing sessions.

Table 7. Results for Five Writing Components

Writing Components	Exp (pre-test)	Exp (post-test)	p-value	Con (pre-test)	Con (post-test)	p-value
Content	22.18	24.16	.000	23.22	23.76	.079
Style	16.24	16.47	.150	16.31	16.44	.374
Language Use	21.25	21.94	.003	21.16	21.04	.719
Organization	16.29	16.96	.047	16.06	16.43	.140
Mechanics	4.54	4.65	.242	4.41	4.65	.014

To evaluate the effectiveness of the intervention, the pre- and post-test scores of the experimental group—comprising 34 learners who engaged in collaborative writing activities using Google Docs—were further analyzed using inferential statistics. The results indicated statistically significant improvement in three writing components—content, organization, and language use—as reflected by p-values less than .05 ($p < .05$). The results revealed that the most notable gain occurred in content, where the mean score increased from 22.18 in the pre-test to 24.16 in the post-test, marking a 1.98-point improvement. This difference was statistically significant, as indicated by a p-value of .000 ($p < .05$). This result suggests that the collaborative writing strategy was particularly effective in helping learners develop and elaborate their ideas. Through peer discussions, idea sharing, and real-time editing in Google Docs, learners were likely able to generate richer content, expand story details, and clarify plot elements more effectively.

Additionally, language use and organization also improved significantly, with increases of 0.69 ($p = .003$) and 0.67 ($p = .047$) points, respectively. Although the difference between these two components is relatively small, the slightly higher gain and stronger significance level for language use suggest that learners benefited from peer interaction and feedback in improving grammatical accuracy and sentence structure. At the same time, improvements in organization indicate that learners were also able to structure their narratives more clearly and logically through

collaborative planning and joint editing. Meanwhile, style or vocabulary selection showed a modest gain of 0.23 points, which was not statistically significant ($p = .150$), and mechanics improved slightly by 0.11 points, without reaching statistical significance as well ($p = .242$). This suggests that while collaborative writing supported idea development, grammar, and organization, it had limited impact on word choice and basic writing conventions, such as spelling, punctuation, and capitalization. Therefore, these findings show that collaborative writing supported by Google Docs contributed to enhanced idea development, grammatical accuracy, and overall coherence in learners' narrative writing performance.

In contrast, the control group, also comprising 34 learners, completed their writing tasks individually using Microsoft Office without peer collaboration. This group exhibited only modest gains in most writing components based on p -value results. The highest increase was observed in content, from a mean score of 23.22 in the pre-test to 23.76 in the post-test, representing a 0.54-point improvement. However, this change was not statistically significant ($p = 0.079$). Organization followed with a 0.37-point gain ($p = .140$), also not significant. The only component to show a statistically significant improvement was mechanics, which increased by 0.24 points ($p = .014$). Style (vocabulary selection) improved slightly by 0.13 points ($p = .374$), while language use declined somewhat from 21.16 to 21.04 (−0.12 points), and the difference was also not significant ($p = .719$). Thus, these results indicate that individual writing practice without collaborative support may have a limited influence on the development of certain aspects of writing performance, with only mechanics showing a statistically meaningful gain and a decline in grammatical accuracy.

DISCUSSIONS

The absence of a significant difference in pre-test scores suggests that both groups began with comparable narrative writing ability, confirming their initial equivalence. However, following the treatment session, the experimental group demonstrated more substantial gains in post-test performance, surpassing that of the control group. This finding indicates that the use of online collaborative writing

facilitated by Google Docs positively influenced learners' narrative writing performance. The observed effect size further highlights that the intervention had a meaningful impact that cannot be attributed to chance. Furthermore, analysis of the five writing components showed significant gains in the experimental group, particularly in content, language use, and organization, while only slight gains were observed in style and mechanics. In contrast, the control group improved only in mechanics, declined in language use, and showed minimal change in other components. These results indicate that the implementation of online collaborative writing through Google Docs led to a significant gain in the experimental group's performance relative to the control group. This finding echoes the conclusions drawn by Ebadi & Rahimi (2017), which showed that using Google Docs enhances EFL learners' academic writing by enabling efficient, collaborative editing and feedback both inside and outside the classroom.

Moreover, the improvement in content observed in the current research suggests enhanced fluency in expressing ideas, which resonates with Jiang & Eslami's (2022) findings that intermediate non-native speakers (INNS) demonstrated significant gains in writing fluency through computer-mediated collaborative writing. This result reinforces the idea that such collaboration supports learners in articulating and developing their thoughts more effectively. Furthermore, this finding is corroborated by Alwahoub et al. (2022), who highlighted the beneficial effects of synchronous collaborative writing activities and the collaborative functionalities of Google Docs. Their research demonstrated that learners reduced linguistic errors and enhanced several writing components, including content such as main ideas, organization through better essay transition use and structure, and language use in terms of spelling and grammar. Hence, Google Docs facilitated peer feedback and revision, enabling learners to incorporate shared insights into their writing. Besides, the improvement in writing performance through collaborative writing can be explained by Vygotsky's sociocultural theory (1978), which affirms the vital role of social interaction in learning. Through collaboration, learners co-construct linguistic and writing knowledge by engaging

with others (Masuara et al., 2022). This mutual scaffolding and discussion deepen their understanding of writing components, leading to improved writing outcomes.

Furthermore, this finding echoes previous research by Fathi et al. (2021), which demonstrated that online collaborative writing through Google Docs significantly enhanced learners' writing performance and their ability to self-regulate during the writing process. Although this present research did not directly examine self-regulation, the collaborative writing process may have offered the development of self-regulatory behaviors within the group context. Previous studies have revealed that online collaborative writing can foster various self-regulation strategies among EFL learners, including goal setting, idea generation, planning, progress monitoring, self-assessment, and metacognitive skills (Fathi et al., 2021; Rahimi & Fathi, 2022). In the meantime, although the post-test scores for style and mechanics showed a numerical improvement in the experimental group, the absence of statistical significance indicates that the intervention had no meaningful impact on learners' performance concerning vocabulary selection and mechanical correctness. This finding reflects similar patterns observed by Abrams (2019), which implied that lexical richness did not positively correlate with collaborative writing using Google Docs, possibly due to the extended span of the writing process as a mitigating condition. This finding is also supported by Albeshier (2024), who reported minimal gain in mechanics, suggesting that Google Docs-mediated collaborative writing overlooks issues related to spelling and punctuation.

Nevertheless, the findings of the present research differ from those of Kılınc & Yüksel (2024), who found no significant impact of online collaborative writing through Google Docs on syntactic complexity. Although the current research focused on narrative texts in the form of fables, which are typically characterized by relatively simple structures, the significant improvement in language use suggests that learners were able to employ more appropriate and varied sentence forms and structures. This result indicates that collaborative writing may have facilitated the development of syntactic complexity, even within a genre that does not inherently require it. Additionally, the outcomes derived from the present study contrast with

those of Hsu & Lo (2018), who reported no statistically significant improvement in organizational aspects following the implementation of a collaborative wiki-based approach. This dissimilarity may be attributed to differences in implementation and task type. Although both studies involved only one collaborative writing task, their study was conducted over nine weeks and focused on expository writing, which they acknowledged as a potential limitation. In contrast, the present study, conducted over four weeks, may have benefited from a more structured approach and a different writing genre, contributing to the improved outcomes.

The positive findings of this research offer several pedagogical implications for the teaching and learning of English, particularly in the context of writing instruction. The improvement in the writing performance of the experimental group implies that utilizing collaborative writing on platforms like Google Docs proves to be a beneficial approach for improving learners' narrative performance in terms of content development, language accuracy, and organizational structure. These improvements reflect the value of real-time interaction, shared authorship, and immediate peer feedback in helping learners generate ideas, construct grammatically accurate sentences, and logically organize their narratives. These findings suggest that when thoughtfully implemented, digital collaborative writing can meaningfully support existing approaches to traditional writing instruction. It not only increases writing quality but also enhances learners' enthusiasm for writing and fosters greater independence in managing writing tasks within EFL learning environments.

In the meantime, it is also noteworthy to recognize certain limitations of the present research that need to be considered and overcome in future research. One key limitation was the short timeframe of the intervention, which spanned over only four sessions—a relatively brief period within the context of a writing class. Additionally, the learners in the experimental group had not previously used Google Docs for writing-related activities, which may have contributed to improvements in their performance due to the novelty of the tool and the potential influence of the Hawthorne effect during the treatment, wherein learners alter their behavior due to the awareness of being part of an experimental condition (Fathi et al., 2021).

Furthermore, the research's focus on tenth-grade learners from a single public senior high school in Tuban may restrict the generalizability and applicability of the findings to wider educational settings. Therefore, future researchers are encouraged to replicate this research with a larger and more diverse population to improve the robustness and practical relevance of the results.

CONCLUSIONS AND SUGGESTIONS

Adopting a quantitative quasi experimental research, this research explored the impact of online collaborative writing strategy via *Google Docs* on the narrative text writing performance of tenth-grade EFL learners. The findings revealed that learners who engaged in collaborative writing using Google Docs exhibited significantly higher gains in writing performance than those who received traditional instruction. The experimental group achieved higher post-test mean scores and demonstrated significant progress in content development, grammatical accuracy, and organizational structure. These results indicate that integrating digital collaboration tools, particularly Google Docs, can be an effective strategy for enhancing narrative writing performance in EFL contexts.

In addition, insights gained from the study serve as the basis for offering several recommendations to relevant stakeholders, including educators, curriculum developers, and future researchers. Despite the overall positive outcomes, the study found that collaborative writing through Google Docs did not result in statistically significant gains in style, particularly in terms of vocabulary selection, nor in mechanics, such as capitalization, spelling, and punctuation. These areas of weakness offer directions for further pedagogical and research efforts. For instance, teachers are encouraged to integrate vocabulary-focused tasks into the collaborative writing process to help learners improve word choice, while explicit guidance and structured peer-editing checklists may support greater accuracy in mechanics. For curriculum developers, it is essential to design digital writing programs that not only support collaboration but also address areas that show limited improvement, particularly vocabulary use and writing mechanics. Future research may also investigate why collaborative writing does not significantly enhance these aspects,

possibly through qualitative approaches that examine learners' difficulties with word choice, spelling, and punctuation in digital writing environments.

REFERENCES

- Abrams, Z. I. (2019). Collaborative writing and text quality in Google Docs. *Language Learning and Technology*, 23(2), 22–42.
- Afrezah, N. N., Azizi, M. R., Alrian, R., Pratiwi, D., & Yulia, Y. (2024). Students' writing skills through collaborative writing and the tendency to work in a group. *Journal of Research in Instructional*, 4(1), 100–110. <https://doi.org/10.30862/jri.v4i1.318>
- Albeshar, K. B. (2024). The Effect of Google-Mediated Collaborative Writing on English as a Second Language Students' Global and Local Writing Features. *SAGE Open*, 14(4), 1–15. <https://doi.org/10.1177/21582440241290034>
- Alharbi, M. A. (2020). Exploring the potential of Google Doc in facilitating innovative teaching and learning practices in an EFL writing course. *Innovation in Language Learning and Teaching*, 14(3), 227–242. <https://doi.org/10.1080/17501229.2019.1572157>
- Alwahoub, H. M., Jomaa, N. J., & Azmi, M. N. L. (2022). The impact of synchronous collaborative writing and Google Docs collaborative features on enhancing students' individual writing performance. *Indonesian Journal of Applied Linguistics*, 12(1), 113–125. <https://doi.org/10.17509/ijal.v12i1.46541>
- Amalia, H., Abdullah, F., & Fatimah, A. S. (2021). Teaching writing to junior high school students: A focus on challenges and solutions. *Journal of Language and Linguistic Studies*, 17(2), 794–810. <https://doi.org/10.17263/jlls.904066>
- Ary, D., Jacobs, C., Irvine, S., & Walker, D. (2019). *Intoduction to Research in Education* (tenth edit). Cengage.
- Keputusan Kepala Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, Pub. L. No. 008/H/KR/2022 (2022).
- Brown, J. D., & Bailey, K. M. (1984). *brown-bailey.pdf* (pp. 21–38). Language Learning.

- Calzada, A., & García Mayo, M. del P. (2020). *Chapter 1. Child EFL grammar learning through a collaborative writing task*. 20–39. <https://doi.org/10.1075/llt.55.01cal>
- Cengiz, B. C. (2022). Using Wikis for Collaborative EFL Writing: Lessons Learned from an Online Writing Course. *English Language Education*, 30(January), 339–365. https://doi.org/10.1007/978-3-031-13540-8_17
- Coffin, P. (2020). Implementing collaborative writing in EFL classrooms: Teachers and students' perspectives. *LEARN Journal: Language Education and Acquisition Research Network*, 13(1), 178–194.
- Cohen, L., Manion, L., & Morrison, K. (2017). Research Method in Education. In *Sustainability (Switzerland)* (8th editio, Vol. 11, Issue 1). Routledge. http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI
- Derewianka, B., & Jones, P. (2016). Teaching Language in Context. In *The Modern Language Journal* (second edi, Vol. 78, Issue 1). Oxford University Press. <https://doi.org/10.2307/329265>
- Ebadi, S., & Rahimi, M. (2017). Exploring the impact of online peer-editing using Google Docs on EFL learners' academic writing skills: a mixed methods study. *Computer Assisted Language Learning*, 30(8), 787–815. <https://doi.org/10.1080/09588221.2017.1363056>
- Fathi, J., Arabani, A. S., & Mohamadi, P. (2021). The effect of collaborative writing using google docs on EFL learners' writing performance and writing self-regulation. *Language Related Research*, 12(5), 333–359. <https://doi.org/10.29252/LRR.12.5.12>
- Fernández Dobao, A. (2012). Collaborative writing tasks in the L2 classroom: Comparing group, pair, and individual work. *Journal of Second Language Writing*, 21(1), 40–58. <https://doi.org/10.1016/j.jslw.2011.12.002>
- Hajimaghsoodi, A., & Maftoon, P. (2020). The Effect of Activity Theory-based Computer-assisted Language Learning on EFL Learners' Writing

- Achievement. *Language Teaching Research Quarterly*, 16(March), 1–21.
<https://doi.org/10.32038/ltrq.2020.16.01>
- Helaluddin, H., Nurhayati, N., Nadya, N. L., Ismail, G., Guntur, M., & Fransori, A. (2023). The Use of Collaborative Strategies to Improve Students' Writing Ability and Self-Efficacy: A Mixed Method Study. *European Journal of Educational Research*, 12(1), 265–280. <https://doi.org/10.12973/eu-jer.12.1.265>
- Helmiyadi, & Kamaliah, N. (2021). An Analysis of Students' Writing in Narrative Text. *JESS (Journal of Education on Social Science)*, 5(1), 51–64.
<http://jess.ppj.unp.ac.id/index.php/JESS>
- Hidayati, K. H. (2018). Teaching Writing to EFL Learners: An Investigation of Challenges Confronted by Indonesian Teachers. *Langkawi Journal of The Association for Arabic and English*, 4(1), 227–244.
<https://doi.org/10.4324/9781315561301-12>
- Hsu, H. C., & Lo, Y. F. (2018). Using wiki-mediated collaboration to foster L2 writing performance. *Language Learning and Technology*, 22(3), 103–123.
- Jabali, O. (2018). Students' attitudes towards EFL university writing: A case study at An-Najah National University, Palestine. *Heliyon*, 4(11), e00896.
<https://doi.org/10.1016/j.heliyon.2018.e00896>
- Jacob, H. L., Zinkgraf, S. A., Wormuth, D. R., Hartfiel, V. F., & Hughey, J. B. (1981). *Testing ESL composition: A practical approach*, rowley, massachuest. August, 29.
- Jiang, W., & Eslami, Z. R. (2022). Effects of computer-mediated collaborative writing on individual EFL writing performance. *Computer Assisted Language Learning*, 35(9), 2701–2730. <https://doi.org/10.1080/09588221.2021.1893753>
- Kemalsyah, M., Solehuddin, M., Hariyadi, A., Jenuri, J., & Suwarma, D. M. (2022). An Analysis of Factors that Affectefl Students' Writing Skill. *QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama*, 14(2), 869–876.
<https://doi.org/10.37680/qalamuna.v14i2.3692>
- Kılınç, B. O., & Yüksel, H. G. (2024). Online collaborative writing in an online EFL writing class. *Research and Practice in Technology Enhanced Learning*,

- 19(September 2023). <https://doi.org/10.58459/rptel.2024.19022>
- L. S. Vygotsky. (1978). The Development of Higher Psychological Processes. In Michael Cole Vera John-Steiner Sylvia Scribner Ellen Soubelman (Ed.), *Harvard University Press*. Harvard University Press. <https://doi.org/10.3928/0048-5713-19850401-09>
- Labira, D. (2023). Teachers' and Students' Reflection on the Problem of Writing Narrative Text in a Remote Area (Flores Island). *LET: Linguistics, Literature and English Teaching Journal*, 13(2), 324–346. <https://doi.org/10.18592/let.v13i2.11452>
- Li, M. (2018). Computer-mediated collaborative writing in L2 contexts: an analysis of empirical research. *Computer Assisted Language Learning*, 31(8), 882–904. <https://doi.org/10.1080/09588221.2018.1465981>
- Luan, N. M., Rajendran, M., Subramanian, J., Jaisankar, D., Oli, L., & Prakash, A. (2024). Exploration of Factors Causing Difficulties in Students' Writing Skills. *World Journal of English Language*, 14(4), 447–458. <https://doi.org/10.5430/wjel.v14n4p447>
- Masura, F., Basthomi, Y., Suci, D. N., & Anggraini, M. P. (2022). Investigating Students' Individual Writing and Collaborative Writing Performance on Different Genres. *Journal of Asia TEFL*, 19(2), 681–690. <https://doi.org/10.18823/asiatefl.2022.19.2.21.681>
- McHugh, M. L. (2012). Lessons in biostatistics interrater reliability: the kappa statistic. *Biochemica Medica*, 22(3), 276–282. <https://hrcak.srce.hr/89395>
- McLoughlin, C., & Lee, M. J. W. (2007). Social software and participatory learning: Pedagogical choices with technology affordances in the web 2.0 era. *ASCILITE 2007 - The Australasian Society for Computers in Learning in Tertiary Education, January 2007*, 664–675.
- Muliani, S., Norahmi, M., & Asi, N. (2019). LET: Linguistics, Literature and English Teaching Journal THE ANALYSIS OF DIFFICULTIES IN WRITING NARRATIVE TEXT. *LEE Journal*, 9(2), 244–264. <https://jurnal.uin-antasari.ac.id/index.php/let/article/view/3312/pdf>

- Mutwarasibo, F. (2013). University Students' Conceptions and Practice of Collaborative Work on Writing. *International Journal of Higher Education*, 2(2), 13–21. <https://doi.org/10.5430/ijhe.v2n2p13>
- Ojha, L. P., & Acharya, R. (2021). The Potential of Blogs as Discussion Forums for Developing Collaborative Writing Skills in Higher Education. In *Innovative Technology and Pedagogical Shifts in Nepalese Higher Education*. Brill. <https://doi.org/10.1163/9789004448865>
- Pallant, J. (2011). For the SPSS Survival Manual website , go to This is what readers from around the world say about the SPSS Survival Manual: *Automotive Industries* AI. <https://www.taylorfrancis.com/books/mono/10.4324/9781003117407/spss-survival-manual-julie-pallant>
- Pham, V. P. H. (2021). The Effects of Collaborative Writing on Students' Writing Fluency: An Efficient Framework for Collaborative Writing. *SAGE Open*, 11(1). <https://doi.org/10.1177/2158244021998363>
- Rahimi, M., & Fathi, J. (2022). Exploring the impact of wiki-mediated collaborative writing on EFL students' writing performance, writing self-regulation, and writing self-efficacy: a mixed methods study. *Computer Assisted Language Learning*, 35(9), 2627–2674. <https://doi.org/10.1080/09588221.2021.1888753>
- Rezeki, Y. S., & Rahmani, E. F. (2021). The Implementation of Collaborative Writing Technique to Improve Students' Writing Performance and Soft Skill. *VELES Voices of English Language Education Society*, 5(2), 81–94. <https://doi.org/10.29408/veles.v5i2.3614>
- Savasci, M., & Kaygisiz, S. (2019). One hand washes the other and both wash the face: individuality versus collaboration in l2 writing. *Eurasian Journal of Applied Linguistics*, 5(1), 131–151. <https://doi.org/10.32601/ejal.543789>
- Storch, N. (2011). Collaborative writing in L2 contexts: Processes, outcomes, and future directions. *Annual Review of Applied Linguistics*, 31, 275–288. <https://doi.org/10.1017/S0267190511000079>
- Storch, N. (2013). *Collaborative Writing in L2 Classrooms*.

- Storch, N. (2019). Collaborative writing. *Language Teaching*, 52(1), 40–59. <https://doi.org/10.1017/S0261444818000320>
- Tjalla, M. (2016). the Use of Prewriting Methods To Develop Efl Students' Competence in Writing. *ETERNAL (English, Teaching, Learning and Research Journal)*, 2(1), 14–24. <https://doi.org/10.24252/eternal.v2i1.2016.a2>
- Toprak, Z., & Yücel, V. (2020). A peculiar practice of academic writing: Epidemic writing in the Turkish graduate education. *Cogent Education*, 7(1), 1–15. <https://doi.org/10.1080/2331186X.2020.1774098>
- Tusino, Dewi, P., & Saputro, W. T. (2022). The Effects of Synchronous and Asynchronous Language Learning on Learner Engagement in EFL Writing. *Journal of Asia TEFL*, 19(2), 655–663. <https://doi.org/10.18823/asiatefl.2022.19.2.18.655>
- Tusino, T., Dewi, P., Lestari, E., Onate, R. V., Chen, Y., & Mezentsev, I. (2024). Computer-Based Technology on Writing Performance: A Systematic Literature Review. *Journal of Languages and Language Teaching*, 12(2), 820. <https://doi.org/10.33394/jollt.v12i2.10812>
- Valizadeh, M. (2022). Collaborative Writing on Google Docs: Effects on EFL Learners' Descriptive Paragraphs. *IJELTAL (Indonesian Journal of English Language Teaching and Applied Linguistics)*, 6(2), 277. <https://doi.org/10.21093/ijeltal.v6i2.1053>
- Villarreal, I., & Gil-Sarratea, N. (2020). The effect of collaborative writing in an EFL secondary setting. *Language Teaching Research*, 24(6), 874–897. <https://doi.org/10.1177/1362168819829017>
- Vygotsky, L. S. (1978). *Mind in Society: The Development Of Higher Psychological Processes* (Issue March).
- Wang, L. (2019). The impact of computer-mediated contexts on interaction pattern of ESL learners in collaborative writing. *Technology, Pedagogy and Education*, 28(5), 547–562. <https://doi.org/10.1080/1475939X.2019.1674183>
- Wang, Y., Kasuma, S. A. B. A., Lah, S. B. C., & Zhang, Q. (2024). Exploring the relationship between EFL students' writing performance and activity theory related influencing factors in the blended learning context. *PLoS ONE*, 19(6),

1–20. <https://doi.org/10.1371/journal.pone.0305668>

Zhang, M. (2018). Collaborative Writing in the EFL Classroom: The Effects of L1 and L2 Use. *System*.

Zioga, C., & Bikos, K. (2020). Collaborative writing using google docs in primary education: Development of argumentative discourse. *Turkish Online Journal of Distance Education*, 21(1), 133–142. <https://doi.org/10.17718/tojde.690372>