Online Collaboration and Writing Proficiency:

A Study of Omani EFL Students at UTAS-Salalah

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Abstract

This mixed-methods study examined the impact of online collaboration on developing academic writing skills among English as a Foreign Language (EFL) students in Oman, with an emphasis on student perspectives. Participants were 8 Level 3 students from the Preparatory Studies Center at the University of Technology and Applied Sciences in Salalah. Furthermore, this study adds to the continuing scholarly discourse around the influence of emerging technologies on the writing performance of students. It focuses on the students' viewpoint, which is sometimes overlooked in most English as a Foreign Language (EFL) educational contexts. Data collection involved classroom observations, text analysis, and semi-structured interviews. Quantitative data was analyzed using descriptive statistics, while qualitative data underwent thematic analysis. The results of the analysis of the students' writing revealed that the impact of online collaboration resulted in an enhancement in the students' overall writing performance compared to the scoring of their first drafts. Nevertheless, the implementation of the method resulted in enhanced performance among students in the sub-skills of grammar and vocabulary while content and organization skills remained unchanged. Interviews highlighted perceived benefits of online cooperation for enhancing writing practices and skills. Students affirmed the value of collaboration as a practical tool to build communication and writing proficiency. This study contributes insights on leveraging technology to empower EFL writers from the learner's viewpoint. Further research should explore optimal strategies for implementing online collaborative writing instruction.

Keywords: EFL, Omani EFL learners, online collaborative learning, UTAS-Salalah, academic writing skills

1. Introduction

Writing is a complex process that requires the integration of diverse skills, including framing perspectives, making choices, and considering the purpose, topic, context, audience, structure, and word choice (Flower & Hayes, 1981; Alber-Morgan et al., 2007). While theoretical perspectives on writing draw from cognitive, linguistic, and sociocultural frameworks (Jones, 2012), recent scholars advocate an interdisciplinary approach that weaves together these theories for a more comprehensive understanding of writing and pedagogy (Kirana & Gupta, 2023; Myhill & Watson, 2011).

Grounded in this integrated theoretical backdrop, the present study investigates the cognitive, social, and linguistic dimensions of writing, with a focus on the collaborative potential of online writing for English as a Foreign Language (EFL) students. Specifically, this research examines whether online collaboration can enhance writing abilities among Omani EFL learners. It also explores how online collaboration reshapes students' writing practices from their own perspectives. Accordingly, the study addresses the following questions:

(1) Does online collaboration improve writing skills for Omani EFL students?

(2) How does online collaboration change students' writing practices?

(3) What benefits and challenges of online collaboration do students perceive in developing EFL writing skills?

By highlighting the value of social interaction during the writing process, this study aims to contribute new insights to the evolving discussion on leveraging digital innovations to empower EFL writers.

2. Literature Review

Writing poses significant challenges for many non-native English speakers (Al Asmari, 2013; Al Seyabi & Tuzlukova, 2014; Mudhsh, 2021). As Stapleton (2010) notes, composing in a second language requires mentally translating thoughts into language before transcribing them in writing. Yet, writing is a critical skill for academic and professional success (Fazel & Ahmadi, 2011; Hyland, 2004). Despite its importance, writing instruction is often neglected in both native and non-native curriculums (Badger & White, 2000). As White (1987) explains, writing is a demanding cognitive process requiring deliberation, discipline, and focus beyond basic language skills. Effective writing pedagogy for language learners, therefore, necessitates multifaceted teaching approaches.

Technology presents transformative potential for writing instruction by enabling collaboration. Web tools, in particular, facilitate collaborative writing and learning for EFL students (Kessler et al., 2012), aligned with Computer-Supported Collaborative Learning (CSCL) theory. As Salmon (2013) notes, online collaboration allows collective knowledge-building and creativity. Accordingly, collaborative writing approaches have gained traction in second language learning (Li, 2017), with multiple authors jointly composing text and sharing responsibility (Jones, 2007; Yang, 2014). Studies show collaborative writing improves writing quality, promotes reflective thinking, and enables idea exchange (Storch, 2012; Yang, 2014).

In summary, writing poses linguistic and cognitive challenges for EFL learners, underscoring the need for effective instructional approaches. Online collaborative writing emerges as a promising pedagogical strategy, offering social knowledge construction to potentially enhance writing skills. Therefore, this study explores the benefits and limitations of this approach for EFL students.

3. A Theoretical Framework

Defining writing precisely is challenging. Writing is commonly seen as a multifaceted and iterative process that demands proficiency in various abilities (Alber-Morgan et al., 2007). The process involves developing ideas and decisions, influenced by factors such as writing purpose, topic, audience, and linguistic elements (Flower & Hayes, 1981). Research in writing is influenced by a complicated and competing theoretical foundation (Jones, 2012). Cognitive theory, linguistic theory, and sociocultural theory are the theoretical frameworks used in research studies on writing (Myhill & Watson, 2011). Moreover, there is a growing trend towards utilizing interdisciplinary techniques to create a more comprehensive theoretical framework that incorporates three theories for a more successful approach to writing instruction (Myhill & Watson, 2011). These three hypotheses have mostly influenced the theoretical framework for research on writing, and the current study follows suit. Cognitive theories aid in comprehending the processes involved in writing, whereas sociocultural theory offers an explanation for the social interactions that occur during the composition process. The linguistic approach is crucial since writing in a second language setting is undeniably more intricate and demanding. The sociocultural theory is helpful because it considers the social interaction among learners during the composition process.

Writing is considered a complex task due to the significant number of authors who struggle to articulate their thoughts on paper. Therefore, it is advised to focus more on writing abilities and offer practical methods for teaching and developing them. Using various instructional approaches significantly impacts the advancement of students' writing skills from an educational standpoint. Various methods have been used to teach writing in ESL/EFL classrooms.

Research consistently demonstrates technology's capacity to enhance student writing in both quantity and quality. Notable studies include Al-Maashani and Mudhsh (2023), Alyafaei and Mudhsh (2023), Phan (2023), Li (2023), Fitria et al. (2023), Zheng and Warschauer (2017), and Al-Mansour and Al-Shorman (2012).

Specifically, computer-assisted language learning (CALL) fosters interactive environments that can improve writing quality (Fidaoui et al., 2010). Al-Mansour and Al-Shorman (2012) found that CALL boosted the effectiveness of traditional teaching on Saudi students' writing. Additionally, Zaini and Mazdayasna (2015) discovered Iranian EFL students using computers outperformed peers using pen-and-paper in grammar, spelling, and paragraph construction. This indicates CALL's value in supplementing conventional instruction (Jafarian et al., 2012).

Moreover, Al-Maashani and Mudhsh (2023) linked technology integration to enhanced language acquisition and motivation. Cooperative digital learning also increases engagement, especially among varied proficiency levels, although reaching consensus poses challenges (Phan, 2023).

Technology not only offers an alternative but also an invaluable supplement to traditional second-language writing instruction. Key benefits include pinpointing student errors, boosting engagement, and enabling unprecedented collaboration.

4. Methodology

This mixed-methods study integrates qualitative and quantitative techniques to fully address the research objectives. In light of the researcher's perspective and the characteristics of the research questions, this study employs a mixed methods approach, incorporating qualitative and quantitative data collection techniques. The qualitative data was gathered through focus groups, semi-structured interviews, and observations, while the quantitative data was gathered through text analysis by students. The priority is qualitative data from observations and in-depth interviews to directly capture student perspectives and meaning-making relevant to the research questions. In this study, quantitative analysis of student texts supplements the qualitative insights.

The mixed-methods approach harnesses the strengths of both qualitative and quantitative paradigms for a comprehensive understanding of the research problem. As Creswell and Creswell (2017) note, this pragmatic worldview values the knowledge generated from diverse perspectives. Accordingly, the qualitative dimension explores students' firsthand experiences and social meanings, while the quantitative analysis examines measurable outcomes in writing performance.

Together, the multi-faceted data offer a nuanced perspective on the complex issue of online collaborative writing. The qualitative emphasis reflects the study's focus on subjective student voices to elucidate if and how this pedagogical approach enhances EFL writing skills. The quantitative analysis provides supporting evidence regarding impacts on writing quality. This powerful blend of data responds to calls for mixed-methods approaches in applied linguistics research (Hashemi & Babaii, 2013).

5. Participants and Instrument

The participants were eight students from Level Three of the English Language Unit of the Preparatory Studies Center at the UTAS-Salalah, Oman. Students were instructed to write two draft essays, which provided the qualitative and quantitative data.

Specifically, the sample comprised EFL learners in their third semester of foundational English studies. This purposive sampling targeted students with emerging but still developing English writing abilities, for whom collaborative writing could potentially provide the greatest benefit. As Gass, Mackey and Ross (2005) note, purposive sampling selects information-rich cases aligned with the study goals.

The students' draft essays served as the key instrument for gauging impacts on writing skills. By analyzing multiple essay drafts over time, changes in quality resulting from the collaborative intervention could be identified. The small sample size enabled in-depth qualitative analysis while still providing sufficient student texts for quantitative comparison. This integrated data collection responded directly to the research questions regarding online collaboration's influence on EFL writing.

6. Data Collection and Analysis Procedures

Students were fully informed of the research scope and participation requirements through oral and written communication at the study's outset. The data collection involved individual interviews with each of the eight participants, conducted after they completed an initial essay draft and again following their revised draft. Students selected the interview location to encourage open discussion. Interviews ranged from 30-40 minutes and were conducted in Arabic, the students' native language, to facilitate candid sharing of perspectives.

To organize the data, individual files were created for each participant as well as a collective file for cross-case analysis. The focus of analysis centered on insights from observational data and the students' essays. Interview transcripts were reviewed multiple times to identify key themes related to the research questions. Essays were evaluated using rubrics to gauge quantitative changes in writing quality resulting from online collaboration.

This iterative qualitative and quantitative analysis enabled triangulation to validate findings and achieve a comprehensive understanding of online collaborative writing's impacts on EFL students (Creswell & Creswell, 2017). All data was secured to maintain participant confidentiality. The Arabic interview transcripts were translated to English only after data analysis to preserve cultural nuances.

7. Results and Discussion

To begin with, the students' scores indicated some differences observed between the students' mean scores over the drafts. The second draft mean score appears to be slightly higher than that of the first draft mean score as shown in Table 1 below.

Table 1. Participants' Overall Scores in the Compare and Contrast Essays

Student Names	First Draft	Second Draft
Fatima	7.83	8.58
Maryam	7.50	8.08
Samah	7.17	8.08
Ali	5.83	6.50
Mohammed	6.50	7.88
Ahmed	6.33	7.00
Yousif	4.50	6.25
Saeed	5.67	6.83
Mean score	6.41	7.4

The data in Table 1 reveals a promising trend - every student showed improved performance from their first to second essay drafts. This underscores the value of revising and refining one's academic writing over multiple drafts. To determine if these gains were statistically significant, the data was analyzed using SPSS software, well-suited for small datasets like this one.

Before jumping into complex stats however, it is wise to check the data meets basic assumptions, like having a normal distribution. The Kolmogorov-Smirnov test can assess normality; here, it gave a p-value of 0.22. In statistics, a p-value over 0.05 usually means we cannot reject the idea the data is normal. So, despite an initial hunch the data was not normally distributed, the test indicates it likely does follow a normal curve.

This presumed normality opens the door for more advanced statistics, like a paired t-test, to really dig into the scores' improvements between drafts. But like any research, it is critical to carefully evaluate the analyses and avoid stretching conclusions too far. As the saying goes, "extraordinary claims require extraordinary evidence." The data hints at promising gains from collaboration, but more careful study is needed to determine just how impactful this strategy may be for helping students finesse their academic writing.

Table 2. Kolmogorov-Smirnov Normality Test (N = 8)

	Mean	Std.	Statistics	df	Sig.
First Draft	6.41	1.08	.130		
Second Draft	7.4	.85	.212	8	.22

This study utilized the Wilcoxon signed-rank test, a nonparametric statistical procedure, to evaluate whether students' writing scores differed significantly between initial and subsequent essay drafts after engaging in online collaboration. Application of this test for matched pairs data revealed a statistically significant improvement in students' writing proficiency ($z = -2.52$, $p < 0.05$) following the collaborative intervention.

Further analysis of the results presented in Table 3 indicates the observed difference in score means is unlikely due to chance variation, with a p-value of 0.012. The z-statistic, significance level, and mean difference align to demonstrate enhanced writing performance that is statistically meaningful, rather than a spurious finding.

The quantitative evidence strongly suggests students' academic writing skills were augmented following online collaboration, with analyses conferring statistical significance to the positive gains in essay scores from first to final drafts. While further studies are imperative to determine the generalizability of these results, they provide preliminary empirical indication that collaborative learning could offer a valuable pedagogical strategy for improving writing proficiency among this population. Researchers should seek to replicate these promising outcomes across broader samples and educational contexts.

Table 3. Wilcoxon Signed Ranks Test

	Second Draft – First Draft
Z	-2.524
Asymp. Sig. (2-tailed)	.012

Further statistical analysis examined differences across four specific writing sub-skills using the Wilcoxon signed-rank test. Results indicated significant improvements from first to final essay drafts in two domains - vocabulary (p = 0.011) and grammar (p = 0.011), as delineated in Table 4. However, the sub-skills of content and organization did not display statistically significant changes, with p-values of 0.187 and 0.054 respectively.

The quantitative evidence signifies students made notable gains in vocabulary and grammar after collaborating online, with p-values denoting statistical significance. However, impacts on content and organization were more modest and not statistically meaningful based on this analysis. Further research with larger samples would lend more confidence in determining the precise effects of online collaboration on developing particular sub-components of academic writing. Present results provide preliminary indication this approach may be especially useful for enhancing vocabulary and grammar, but not necessarily content and structure.

Table 4. The Mean Difference

	Organization	Vocabulary	Content	Grammar
Sig.	.054	.011	.187	.011

Besides, a comparison between the students' sub-skills scores are highlighted in Table 5.

Table 5. The Participants in Their compare and Contrast Essays

Student Names	First Draft				Second Draft			
	Organization	Content	Vocabulary	Grammar	Organization	Content	Vocabulary	Grammar
Fatima	7.50	7.83	7.50	6.83	8.00	8.00	8.83	9.00
Maryam	7.00	6.83	6.00	5.67	6.83	7.00	7.33	8.00
Samah	7.33	7.33	6.50	6.33	7.50	7.50	8.00	8.83
Ali	6.50	6.67	5.83	5.33	6.50	7.00	7.17	7.83
Mohammed	7.83	7.83	7.33	6.67	8.00	8.00	8.83	9.00
Ahmed	6.83	7.33	6.83	6.17	7.00	7.00	7.83	8.50
Yousif	6.17	6.33	5.83	5.50	6.50	6.50	7.33	7.67
Saeed	6.83	7.00	6.17	5.67	7.00	7.00	7.50	8.17

The data in the preceding table demonstrates all students made positive revisions to grammar and vocabulary between essay drafts. This included correcting grammatical errors, improving punctuation, and refining word choice to enhance the overall quality of their writing. However, two high-achieving students, Fatima and Samah, reported making minimal adjustments, particularly to grammar, between drafts. Their advanced linguistic proficiency posed difficulty for peers to identify areas needing improvement.

In essence, while most students benefited from collaborative editing of grammar and word choice, some with exceptional skills did not gain as much from peer review. This aligns with Vygotsky's theory of proximal development, whereby learners require scaffolding within a reasonable range beyond their current level to maximize gains. Students with very high language abilities may exceed their peers' proficiency such that collaborative work offers limited advancement. Educators should be cognizant of this potential ceiling effect when structuring mixed-ability cooperative learning.

This also underscores the importance of nuanced qualitative data to illuminate exceptions to broad quantitative patterns. While the overall scores showed collective gains in grammar and vocabulary, the interview narratives reveal a more complex picture based on students' initial proficiency. A thorough mixed-methods analysis provides deeper insights into collaborative writing's multifaceted impacts on particular learners.

The data reveals students broadly improved their vocabulary usage across their essays, including integrating new terms, sharpening precision of word choice, and strategic use of modifiers. These findings concur with similar vocabulary gains reported by Li (2023) and Fitria et al. (2023) in collaborative writing studies. However, two top students, Fatima and Mohammed, made minimal vocabulary changes between drafts. They attributed this to their advanced proficiency limiting peers' ability to pinpoint areas for refinement.

This also aligns with Vygotsky's theory that learning is most effective within a student's zone of proximal development, requiring scaffolding slightly above their current capability. Students exceeding their peers' proficiency may hit a collaborative plateau. This underscores the value of mixed methods data; while the overall scores reflected collective vocabulary gains, the narratives provided nuance around outliers.

Educators should be mindful that peer learning has boundaries based on students' relative proficiency levels. Techniques like strategic grouping, role assignment, and teacher guidance may help maximize vocabulary gains for both advanced and emerging writers within a collaborative framework. Further research should explore customized support to leverage peer learning despite proficiency gaps.

In contrast to vocabulary and grammar, enhancements in essay structure and content were more subtle. Notably, two students' scores were identical across drafts for these sub-skills. In interviews, many justified this consistency by expressing confidence in their existing organization and ideas.

Intriguingly, some students, including Yousif, Ali, and Saeed, appeared to prioritize word count over content quality, even when the task specified a 250-word limit. This aligns with previous research indicating some student writers focus extensively on quantity rather than depth and coherence (Limpo & Alves, 2017; Uzun, 2013). It also reflects Brooke's cognitive process model of writing, whereby inexperienced writers tend to have limited working memory to juggle content and structure simultaneously.

Educators should be cognizant that developing student writers may over-attend to surface features like length rather than meaning. Direct instruction, modeling, and collaborative dialogue around content and structure could help balance quality and quantity. Findings also suggest personalized feedback beyond peer input may be necessary to substantially improve some students' organizational skills. Further investigations into tailored scaffolding strategies could provide insights into refining content and structure for developing academic writers.

Consistent with Fitria et al. (2023) and Do Minh (2023), this study found online collaboration displayed potential to strengthen students' writing skills. However, detailed analysis of the scores revealed enhancements occurred primarily at micro-levels of grammar and vocabulary, rather than broader organization and content. Less proficient students demonstrated the most significant improvements in these linguistic areas. Their novice grasp of macro-level writing skills may explain the minimal revisions to overall structure and ideas.

Additionally, students emphasized prioritizing grammar and vocabulary development as English as EFL learners. This aligns with research showing second language writers, especially beginners, often focus on sentence-level forms before global attributes when revising (Silva, 1993). Teachers should recognize this tendency to target surface errors over meaning and offer scaffolded guidance to balance micro and macro writing skills.

While findings were constrained, results provide preliminary support for collaborative writing's potential to strengthen linguistic accuracy. Broadening the benefits to macro-level qualities could maximize collaborative writing's utility for holistic writing proficiency.

Table 6. Participants' Overall Scores in Their Compare and Contrast Essays

Student Names	First Draft	Second Draft
Fatima	7.50	8.80
Maryam	6.50	8.30
Samah	7.00	8.50
Ali	6.17	7.20
Mohammed	7.50	8.80
Ahmed	6.83	7.30
Yousif	6.00	7.50
Saeed	6.50	7.80
Mean Score	6.75	8.02

Analysis of the mean scores in Table 6 reveals a positive trend of improved writing performance across drafts following online collaboration. The average marks increased from 6.75 on initial drafts to 8.02 on final drafts for overall writing skill. This is consistent with similar findings by Do Minh (2023) suggesting collaborative writing enhances output quality. Individually, Sara demonstrated the most gains in her revised draft, while Salim showed

relatively minimal improvement. Consistently high performers were Fatima and Mohammed, whereas Ahmed scored lower than his peers.

For all students, final drafts earned higher scores versus initial submissions. This implies iterative collaborative refinement genuinely strengthened writing standards. Table 7 provides a detailed breakdown of individual gains across specific sub-skills. Further granular analysis could elucidate relative impacts on particular components like vocabulary versus content.

In summary, quantitative results suggest students benefited from collaborating online to elevate their academic writing abilities both collectively and individually. While gains varied based on proficiency, the overall trend indicates collaborative writing is a promising instructional strategy for developing skills.

Table 7. Scores of the Participants in Their Cause-Effect Essays

Student Names	First Draft				Second Draft			
	Organization	Content	Vocabulary	Grammar	Organization	Content	Vocabulary	Grammar
Fatima	7.67	8.50	8.33	7.67	8.00	8.50	8.58	9.00
Maryam	7.33	8.17	7.50	7.17	7.50	8.17	8.17	8.50
Samah	7.17	8.00	7.71	6.83	7.33	8.00	8.33	8.83
Ali	5.67	6.33	6.50	5.33	5.67	6.33	6.67	7.17
Mohammed	6.33	7.33	7.88	5.83	6.50	7.50	8.33	9.00
Ahmed	6.33	7.17	6.67	5.83	6.33	7.17	7.00	7.33
Yousif	4.33	5.17	6.25	4.17	4.33	5.50	7.33	7.83
Saeed	5.33	6.50	6.83	5.00	5.33	7.00	7.67	8.17

The data revealed promising student progress in both micro and macro writing skills across drafts. At the micro level, universal gains were evident in grammar and vocabulary usage. Fatima consistently exceeded peers in these linguistic domains. Mohammed displayed an interesting trajectory - while not topping initial draft scores, peer feedback helped elevate his grammar equal to Fatima's in the final piece. Despite making subtle revisions, he credited collaborator critiques for improving his latter draft.

This is congruent with sociocultural theory, suggesting peer scaffolding assists writers in reaching higher ability levels (de Guerrero & Villamil, 2000). It also reflects Vygotsky's zone of proximal development, wherein Mohammed's potential was realized through supportive collaboration. Educators should leverage cooperative editing to stretch developing writers within reach of their capabilities. Peer dialogue can illuminate linguistic gaps less discernible working independently.

However, findings were more variable at the macro level, with minimal revisions in structure and content for some students. Targeted instructional support may be necessary to substantially improve global writing skills. Sustomized scaffolding should be further explored to expand collaborative writing's micro and macro benefits.

In contrast to micro skills, findings in macro areas of structure and content were limited. Only half the students showed improved organization, with four displaying no change across drafts. Similarly, just three students demonstrated slightly enhanced content. Interviews revealed most participants did not critique structural or ideological aspects of peers' writing. As Ahmed commented, "My primary lens is trained on rectifying lexical and grammatical nuances," encapsulating the focus among EFL learners on linguistic forms.

This is in line with research showing second language writers prioritize grammar and vocabulary over higher-order concerns like ideas and organization, especially at beginner levels (Silva, 1993). It reflects Vygotsky's theory that skills within a learner's zone of proximal development, such as sentence-level features, are more readily developed through collaboration than advanced skills exceeding their current capability.

Educators must recognize this tendency to target surface errors and provide scaffolded guidance to address macro-level qualities. As Sze (2002) notes, deliberate instruction is often necessary to train second language writers' attention to content and structure when revising. To validate claims of improved writing performance, consistent evaluative methods were utilized across drafts. The progression pattern echoes findings by Zaini and

Mazdayasna (2015) in a similar collaborative writing study. Given the small sample size (n = 8), normality testing was first conducted to determine data distribution. The Kolmogorov-Smirnov test applied to the two data sets yielded a p-value of 0.20, suggesting violation of normality assumptions as shown in Table 8.

With non-normal data distribution, nonparametric tests become preferable for drawing statistical inferences. Therefore, the Wilcoxon signed-rank test was selected to compare matched samples - students' initial and final draft scores. Application of this nonparametric equivalent of the paired t-test revealed statistically significant gains from first to final drafts following online collaboration (z = -2.53, p = 0.012).

To sum up, rigorous quantitative analysis substantiated observable improvements in academic writing outcomes. Further research with larger samples would lend more statistical power to determine the magnitude of effects. But present results provide preliminary evidence that collaborative writing holds pedagogical potential for developing EFL students' writing skills.

Table 8. The Kolmogorov-Smirnov Tests of Normality (N = 8)

	Mean	Std.	Statistics	df	Sig.
First Draft	6.75	.56	.172	8	.20
Second Draft	8.02	.65	.162		

Given the non-normal distribution of the data, as Pallant (2020) notes, a nonparametric test was selected for statistical analysis. Specifically, the Wilcoxon signed-rank test was utilized to examine students' overall writing scores for statistically significant differences between the first and second drafts.

As the nonparametric equivalent to the paired samples t-test, the Wilcoxon signed-rank test is appropriate for comparing repeated measurements on a single sample when normality assumptions are violated (Laerd Statistics, 2018). Application of this test to the writing score data revealed a statistically significant improvement from students' initial to final drafts following the online collaborative intervention (z = -2.53, p = 0.012).

The use of an appropriate nonparametric test substantiated observable gains in academic writing outcomes, conferring statistical significance to the higher scores in revised versus original drafts. This provides preliminary quantitative evidence that collaborative writing may benefit developing EFL students' skills. Application of the Wilcoxon signed-rank test provided illuminating results. As shown in Table 9, a statistically significant p-value of 0.011 was obtained. Further analysis in Table 5.15 underscored this finding, not just presenting the p-value and significance level, but also delineating the mean score difference.

Together, these quantitative indicators substantiate a statistically meaningful improvement in students' writing proficiency following online collaboration. Precisely, the Wilcoxon test yielded a z-score of -2.53 and a significant p-value (p < 0.05). Moreover, the large effect size (d = 2.14) signifies that gains were not only statistically significant but also practically impactful.

Generally, rigorous statistical analysis provides compelling evidence that students' academic writing skills were enhanced through collaborative writing. The magnitude of the demonstrated effects implies this pedagogical approach could offer substantive benefits for developing EFL writers. Researchers should continue investigating optimal implementation strategies to maximize its utility across educational contexts.

Table 9. Wilcoxon Signed Ranks Test

	Second Draft – First Draft
Z	-2.536
Asymp. Sig. (2-tailed)	.011
a. Wilcoxon Signed Ranks Test	

Calculating the effect size was critical for determining the magnitude of change in writing scores between drafts. Given the small sample, only robust effects would be detectable. However, effect sizes are invaluable for contextualizing current findings and enabling future meta-analyses on collaborative writing impacts.

The substantial effect of d = 2.14 indicates peer interaction strongly influenced improved overall writing proficiency. Specifically, the p-value of 0.011 signifies statistical significance surpassing both 0.05 and 0.01 thresholds. This supports that online collaboration facilitates meaningful enhancements in skills, aligning with similar studies (e.g., Fitria et al., 2023; Do Minh, 2023).

While score differences appear slight superficially, rigorous analysis proves they are statistically remarkable with a large effect. This lends credence to online collaboration serving as an effective catalyst for developing writers. Educators should leverage technology's potential to stimulate meaningful peer engagement and collective knowledge construction. It can be stated that a synthesis of the statistical evidence substantiates that collaborative writing significantly elevates EFL students' skills. The research makes a compelling case for integrating this approach to empower developing academic writers.

Table 10. Wilcoxon Signed Ranks Test

	Organization	Vocabulary	Content	Grammar
Sig.	.066	.012	.109	.012

Application of the Wilcoxon signed-rank test to evaluate changes in writing sub-skills revealed notable trends. Students demonstrated substantial gains in vocabulary and grammar, with statistically significant p-values of 0.012. This implies students were especially responsive to feedback in these areas or had greater room for improvement. However, content and organization remained relatively stable, with non-significant p-values of 0.109 and 0.066 respectively, suggesting online collaboration did not impact these skills measurably.

Interview data provides richer context to the statistics. One participant's indifference towards peer feedback highlights the perpetual challenge of learner engagement in collaborative contexts, potentially stemming from limited understanding of its value. Nonetheless, students displayed overall growth, with cause-and-effect essays exemplifying improvements across multiple dimensions. These observations concur with similar findings by Phan (2023) and Fitria et al. (2023) on collaborative writing's benefits. Yet, persistent struggles in content and structure reflect a broader tendency of prioritizing micro-level language skills over macro-level abilities. For EFL learners particularly, perfecting grammar and vocabulary often overrides developing sophisticated ideas and organization. This may indicate curricular or pedagogical gaps in emphasizing higher-order skills.

While data shows promising gains in grammar and vocabulary, stagnation in content and organization underscores the need for balanced writing instruction across micro and macro dimensions. Educators must leverage collaborative affordances while providing holistic scaffolding to elevate developing EFL writers' skills.

8. Conclusion

This study provides evidence that online collaboration can enhance EFL students' writing practices, triangulating multiple data sources to give a comprehensive view of the learner experience. The findings help address a literature gap by centering student perspectives on collaborative writing.

Students identified benefits like improved interaction, exposure to diverse styles, and motivation to participate. However, challenges were also noted, including time constraints, unhelpful feedback, and perceived lack of teacher engagement. Yet overall, results indicate the advantages can outweigh the limitations when implemented effectively.

Educators play a pivotal role in setting expectations, ensuring students understand objectives, and preparing them to engage productively online. With deliberate guidance, instructors can optimize collaborative writing to become a more rewarding and enriching pedagogical approach for developing EFL writers.

Similar to any other research endeavor, there are several constraints that must be recognized throughout the execution of this study. These constraints are fundamentally linked to the study sample, time-frame, and the challenges associated with technology implementation. While promising, more research is needed to corroborate effects across educational contexts. Future studies should explore optimal group composition, technology platforms, training, and teacher scaffolding to maximize the value of online peer engagement for writing growth. Creative solutions to overcome identified challenges should also be investigated.

In closing, this study provides preliminary evidence that purposeful collaborative writing can unlock new possibilities for empowering students and advancing writing pedagogy in the digital age. But optimizing and extending its benefits requires continued research and pedagogical ingenuity.

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