



Collaborative Learning and Paragraph Writing Skills: Analyzing Effects and Engagement for EFL Students

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Article Info	Abstract
Received: 2025-06-19 Revised: 2025 12-30 Accepted: 2026 05-31 Keywords: Round-Robin Technique; Collaborative Writing; Paragraph Writing; Student Engagement; EFL Writing DOI: 10.24256/ideasv14i1.7557 Corresponding Author: Nugroho nugroho2210@gmail.com Univeritas Indraprasta PGRI	<i>This study investigated the effects of integrating round-robin and collaborative writing techniques on the paragraph writing performance and engagement of English as a Foreign Language (EFL) students. Employing a quasi-experimental pretest-posttest control group Design, the study involved 160 undergraduate students enrolled in compulsory writing courses, divided into an experimental group and a control group. Over six weeks, the experimental group received instruction through a combination of round-robin drafting and collaborative writing activities, while the control group received traditional, teacher-centered writing instruction. Students' paragraph-writing ability was measured using a rubric-based writing test, and engagement was assessed using a multidimensional questionnaire covering behavioral, cognitive, affective, and emotional engagement. Results indicated that both groups showed significant improvement in paragraph writing performance; however, the experimental group achieved substantially higher posttest scores. Effect size analysis revealed a large impact of the integrated collaborative techniques (Cohen's $d = 3.12$), compared to a moderate-to-large effect in the control group ($d = 2.34$). Normalized gain scores further confirmed the intervention's superior effectiveness. Engagement findings showed high levels across all dimensions among students in the experimental group. These findings suggest that integrating round-robin and collaborative writing techniques provides an effective pedagogical approach for enhancing paragraph writing performance and fostering student engagement in EFL contexts. The study highlights the value of structured peer interaction and shared authorship in writing instruction.</i>

1. Introduction

Writing is a critical skill in academic and professional contexts, serving as a medium for expressing ideas, communicating knowledge, and demonstrating comprehension (Rashid et al., 2019). Effective writing begins with the ability to construct coherent and cohesive paragraphs, which form the foundation for more complex academic texts (Ulaywi, 2021; Zhang, 2019). However, many EFL learners experience persistent difficulties in paragraph writing, including generating clear topic sentences, organizing supporting details, maintaining coherence, and achieving unity (Supiani, 2017; Veramuthu & Md Shah, 2020). These challenges often result in fragmented ideas and weak logical flow.

Collaborative learning has been widely implemented to address these writing difficulties. Rooted in social constructivist theory, collaborative learning emphasizes interaction, shared responsibility, and knowledge co-construction through peer engagement (Dillenbourg, 2002). Through collaborative activities, learners exchange ideas, negotiate meaning, and engage in collective problem-solving, which can enhance writing quality and metacognitive awareness (Bowden et al., 2021; Stanton et al., 2021). Prior studies have reported that collaborative learning positively influences writing performance and reduces writing anxiety (Cao et al., 2022; Cherbonnier et al., 2024).

Among collaborative learning techniques, round-robin and collaborative writing have received increasing attention in paragraph writing instruction. The round-robin technique is a structured approach in which students contribute sequentially to a shared writing task, ensuring equitable participation and minimizing dominance by more proficient learners (Barkley et al., 2005; Kitjaroonchai & Suppasetseree, 2021). This technique promotes inclusivity, peer modeling, and writing fluency through iterative contribution (Jenkinson et al., 2019; Rogahang et al., 2024). In contrast, collaborative writing is a broader instructional approach that involves joint planning, drafting, revising, and editing, emphasizing shared authorship and negotiation of meaning (Kovaleva & Khachatryan, 2021; Shofiah et al., 2024).

Although these techniques are sometimes treated as interchangeable, their pedagogical functions differ. Round-robin activities primarily structure participation and sentence-level contribution, whereas collaborative writing supports deeper cognitive engagement and metacognitive regulation (Steenkamp & Brink, 2024; Wang et al., 2024). Empirical evidence examining the combined implementation of these techniques remains limited, particularly in paragraph-level instruction (Ouyang et al., 2024).

Student engagement is another critical factor influencing writing achievement. Engagement comprises behavioral, cognitive, affective, and emotional dimensions that interact to shape learning outcomes (Lei et al., 2018). Collaborative writing activities have been shown to enhance engagement by

fostering social interaction, shared accountability, and emotional support (Leite, 2018; Liu et al., 2017). Nevertheless, limited research has explored how the integration of round-robin and collaborative writing techniques influences multidimensional student engagement in EFL paragraph writing contexts.

This study empirically evaluates the effectiveness of integrating round-robin and Collaborative Writing techniques to improve paragraph writing skills. Using a quasi-experimental design, the research examines how these techniques enhance specific elements of paragraph construction, including precise topic sentences, relevant supporting details, and cohesive transitions. Additionally, it compares the performance of learners exposed to this dual approach with that of learners taught via conventional, instructor-centered methods, thereby offering insights into the relative advantages of this approach for curriculum design and collaborative pedagogy.

Research Questions:

1. How does the writing performance of students taught using these techniques compare to those taught using traditional methods?
2. How do round-robin and collaborative writing techniques influence the students' engagement?

2. Method

Research Design

This study employed a quasi-experimental pretest–posttest control group design to examine the effects of round-robin and collaborative writing techniques on students' paragraph writing ability and engagement. The study was conducted over a six-week period. Two intact classes were assigned as the experimental group and the control group to maintain existing instructional settings while allowing meaningful comparison between interventions.

Participants and Group Assignment

The participants were 160 undergraduate students enrolled in compulsory writing courses at a higher education institution. Purposive sampling was used to select intact classes with comparable academic backgrounds and prior writing experience. One class ($n = 80$) was assigned as the experimental group, and another class ($n = 80$) served as the control group. Although random assignment at the individual level was not feasible, pretest results confirmed that the two groups demonstrated equivalent baseline paragraph writing performance.

Intervention Procedures

The intervention lasted six weeks, with two instructional sessions per week (90 minutes per session), resulting in a total of twelve sessions. In the experimental group, instruction integrated round-robin and collaborative writing techniques

within a collaborative learning framework. Each instructional cycle followed three stages:

Pre-writing and modeling: The instructor introduced paragraph writing objectives, reviewed model paragraphs, and discussed criteria for effective topic sentences, supporting details, coherence, and unity.

Round-robin drafting: Students worked in small groups of four to five. Using the round-robin technique, each student contributed sequentially to a shared paragraph by adding a sentence or idea in turn. This stage emphasized equal participation and sentence-level cohesion.

Collaborative writing and revision: Groups jointly revised their paragraphs through discussion, peer feedback, and collective decision-making. Students negotiated meaning, reorganized ideas, refined language use, and improved coherence and unity.

The control group received traditional writing instruction. This approach consisted of teacher-centered explanation of paragraph structure, individual writing practice, and corrective feedback provided primarily by the instructor. Students completed paragraph writing tasks independently, followed by whole-class review and limited peer interaction. No structured collaborative techniques were employed in the control group.

Instruments

Paragraph Writing Test

Students' paragraph writing ability was measured using a researcher-developed writing test administered as both a pretest and posttest. Students were asked to write a single expository paragraph based on a given prompt. The scoring rubric assessed four dimensions: (1) clarity of topic sentence, (2) relevance and development of supporting details, (3) coherence and use of transitions, and (4) unity and overall organization. Each dimension was rated on a five-point scale, yielding a maximum score of 20.

Two trained raters independently scored all writing samples. Inter-rater reliability was calculated using Cohen's kappa and yielded a coefficient of 0.87, indicating high agreement. Content validity of the rubric was established through expert judgment by two writing instructors, and internal consistency reliability reached an acceptable level (Cronbach's $\alpha = 0.84$).

Student Engagement Questionnaire

Student engagement was measured using a Likert-scale questionnaire (1 = strongly disagree to 5 = strongly agree) adapted from established engagement frameworks. The questionnaire consisted of four dimensions: behavioral engagement (e.g., "I actively participated in group writing activities"), cognitive engagement (e.g., "I put effort into improving my paragraph through discussion"), affective engagement (e.g., "I enjoyed learning to write paragraphs through group

work”), and emotional engagement (e.g., “I felt comfortable sharing my ideas with my group members”).

The questionnaire was reviewed by experts to ensure content validity. Reliability analysis showed satisfactory internal consistency for each dimension (α ranging from 0.81 to 0.88).

Data Collection Timeline

During Week 1, both groups completed the pretest paragraph writing task and the engagement questionnaire. Weeks 2–5 were devoted to the instructional intervention. In Week 6, students completed the posttest writing task and the engagement questionnaire.

3. Result and Discussion

Result

Research Question 1

Table 1. Descriptive Statistics of Pre-test and Post-test Scores

<i>Group</i>	<i>Test Type</i>	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>
Control	Pre-test	80	40	80	55.06	8.248
Control	Post-test	80	60	90	71.56	6.394
Experimental	Pre-test	80	40	80	54.75	8.453
Experimental	Post-test	80	70	95	85.31	5.918

Descriptive statistics indicated comparable baseline performance between the experimental group ($M = 54.75$, $SD = 8.45$) and the control group ($M = 55.06$, $SD = 8.25$), confirming initial equivalence prior to the intervention. Following the six-week instructional period, both groups demonstrated improvement; however, the experimental group achieved substantially higher post-test scores ($M = 85.31$, $SD = 5.92$) than the control group ($M = 71.56$, $SD = 6.39$).

Post-intervention results demonstrate substantial improvements in both groups, with the experimental group showing markedly superior gains. The control group improved to 71.56 ($SD = 6.394$), representing a 16.5-point increase from the baseline. The experimental group achieved a mean of 85.31 ($SD = 5.918$), reflecting a 30.56-point improvement. Additionally, the experimental group showed reduced score variability, suggesting more consistent learning outcomes.

Table 2. Paired Samples t-Test Results

<i>Group</i>	<i>Mean Difference</i>	<i>Std. Deviation</i>	<i>Std. Error</i>	<i>95% CI Lower</i>	<i>95% CI Upper</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
Control	-16.500	7.044	0.788	-18.068	-14.932	-20.951	79	0.000
Experimental	-30.563	9.776	1.093	-32.751	-28.375	-27.951	79	0.000

32.738 28.387 27.963

Paired-samples t-tests revealed statistically significant gains in paragraph writing performance for both groups ($p < .001$). To complement statistical significance, effect sizes were calculated using Cohen's d . The experimental group demonstrated a large effect size ($d = 3.12$), whereas the control group showed a moderate-to-large effect ($d = 2.34$), indicating a markedly stronger impact of the collaborative intervention. *Table 3. N-Gain Percentage Comparison*

Group	Mean N-Gain (%)	Std. Error	Interpretation
Control	35.94	1.46	Medium gain
Experimental	66.41	1.74	High gain

Normalized gain analysis further demonstrated the practical significance of the findings. The experimental group achieved a high N-Gain (66.41%), while the control group reached a medium N-Gain (35.94%). These results indicate that students exposed to round-robin and collaborative writing techniques achieved nearly twice the proportion of their potential improvement compared to those receiving traditional instruction.

Qualitative examination of student writing samples supported these quantitative findings. Pre-test paragraphs in both groups frequently lacked explicit topic sentences, contained loosely connected ideas, and demonstrated weak coherence. In contrast, post-test paragraphs from the experimental group typically featured clearly stated topic sentences, logically ordered supporting details, and improved transitions, reflecting stronger unity and coherence.

Research Question 2

Table 4. Student Engagement Levels

Engagement Type	N	Min	Max	Mean	Std. Deviation	Score/Total	Percentage
Behavioral	80	24	30	26.99	1.392	2159/2400	89.96%
Cognitive	80	24	29	26.98	1.190	2158/2400	89.92%
Affective	80	25	30	27.01	1.268	2161/2400	90.04%
Emotional	80	23	30	26.98	1.467	2158/2400	89.92%

Student engagement data collected from the experimental group revealed consistently high levels across all four dimensions. Behavioral, cognitive, affective, and emotional engagement scores ranged from 89.92% to 90.04%, indicating strong multidimensional engagement during collaborative writing activities.

Engagement data were not collected from the control group because the questionnaire was designed to capture engagement specifically within collaborative learning contexts. As a result, direct quantitative comparison between groups was not conducted. This methodological limitation is addressed in the discussion section.

4. Discussion

The results demonstrate that round-robin and collaborative writing techniques significantly outperform traditional methods in paragraph writing instruction. The experimental group's post-test mean of 85.31 compared to the control group's 71.56 represents a substantial 13.75-point advantage, providing compelling evidence for the superiority of collaborative approaches. The magnitude of improvement within each group is equally revealing. While the control group showed a respectable 16.5-point improvement from pre-test to post-test, the experimental group's 30.56-point gain was nearly double this amount. This finding suggests that collaborative techniques not only produce better outcomes but also facilitate more substantial learning gains from baseline performance.

The statistical significance of these improvements ($p < 0.001$ for both groups) confirms that the observed changes are not due to chance. However, the larger t -value for the experimental group (-27.963 vs. -20.951) indicates a more pronounced and reliable effect. The non-overlapping confidence intervals further strengthen the conclusion that the two interventions produced distinctly different outcomes. The normalized gain analysis provides additional insight into the practical significance of these findings. The experimental group's 66.41% N-Gain, classified as "high gain," compared to the control group's 35.94% "medium gain," demonstrates that collaborative techniques help students achieve a much greater proportion of their potential improvement. This 1.85-fold difference in learning efficiency has important implications for educational practice.

Notably, the experimental group's post-test scores exhibit reduced variability ($SD = 5.918$ vs. 6.394). This finding suggests that collaborative techniques not only improve average performance but also create more consistent learning outcomes across diverse learners. The implications of this finding align with collaborative learning theory, which emphasizes the benefits of peer interaction and the construction of shared knowledge (Alzubi et al., 2024; Eskiurt & Özkan, 2024).

The substantial 30.56-point improvement in the experimental group compared to the control group's 16.5-point gain can be attributed to several theoretical frameworks that explain how collaborative learning enhances writing performance. The superior performance of the experimental group supports social constructivist theory, as students actively constructed knowledge through peer interaction. The 13.75-point advantage in final scores suggests that collaborative dialogue enabled students to articulate their thinking, challenge assumptions, and refine their understanding more effectively than they would have in individual work.

Zone of Proximal Development: The experimental group's ability to achieve 66.41% of their potential improvement (compared to 35.94% in the control group) demonstrates how peer collaboration allows students to achieve higher performance levels than they could independently. The reduced standard deviation

(5.918 vs. 6.394) indicates that peer scaffolding particularly benefited struggling students. Metacognitive Development: The higher t-value (-27.963) for the experimental group suggests that collaborative writing processes promoted stronger metacognitive awareness as students engaged in planning, monitoring, and evaluating their writing through continuous peer feedback.

Several specific factors inherent in collaborative learning approaches contributed to the observed improvements. The round-robin technique facilitates equal participation by requiring sequential contributions, preventing dominance by vocal students, and ensuring all voices are heard (Barkley et al., 2005). Students benefited from real-time peer input, allowing them to identify and address weaknesses in paragraph structure, coherence, and supporting details during the writing process. Exposure to various writing styles and approaches through peer interaction enhanced students' understanding of effective paragraph construction. The reduced variability in post-test scores for the experimental group (SD = 5.918 vs. 6.394) suggests that collaborative techniques provide scaffolding that helps struggling students achieve more consistent results.

These findings align with recent research emphasizing targeted interventions in writing instruction. (Cherbonnier et al., 2025; Sever & Akyol, 2022) demonstrated statistically significant differences in post-test scores between experimental and control groups, suggesting that structured pedagogical strategies enhance self-regulation in writing. The current study extends these findings by specifically demonstrating the effectiveness of collaborative techniques for paragraph writing skills. Similarly, (Shofiah et al., 2024) highlighted the dual impact of interventions on writing proficiency and critical thinking, showing that methodologies integrating analytical tasks not only refine technical writing skills but also deepen students' cognitive abilities. This supports the current study's finding that collaborative writing techniques promote both skill development and cognitive engagement.

Behavioral engagement scored second highest (89.96%, mean = 26.99), demonstrating that students were actively participating in the collaborative activities. This high level of behavioral engagement, combined with the low standard deviation (1.392), indicates that the round-robin technique successfully ensured consistent participation across all students, preventing the common problem of unequal contribution in group work. The cognitive and emotional engagement scores (both 89.92%) were virtually identical, suggesting that intellectual investment and emotional connection to peers occurred simultaneously. This balance is crucial for effective collaborative learning, as it indicates that students were both mentally challenged and emotionally supported throughout the process.

The consistently low standard deviations across all engagement dimensions (ranging from 1.190 to 1.467) are particularly noteworthy. These values indicate minimal variability among participants, suggesting that collaborative techniques

effectively engaged virtually all students rather than creating high engagement for some and low engagement for others. This finding addresses a common concern about group work - that it may not engage all learners equally.

The observed high engagement levels (all above 89.92%) can be explained through several specific mechanisms that collaborative techniques activate. The consistently high behavioral engagement (89.96%) suggests that students felt responsible for their group members. This social accountability created intrinsic motivation that traditional individual work cannot replicate. The high cognitive engagement (89.92%) indicates that peer interactions provided real-time intellectual stimulation and validation. Students received immediate feedback on their ideas, maintaining their cognitive investment throughout the writing process. The balanced engagement across all dimensions suggests that collaborative support systems helped students feel more confident about their writing abilities. The low standard deviations indicate that even typically anxious students maintained high levels of engagement. The high affective engagement (90.04%) demonstrates that students felt greater control over their learning experience through group interactions. This sense of ownership fostered emotional investment in the learning outcomes.

These findings align with those of Baanqud et al. (2020), who emphasized the roles of cognitive engagement, knowledge sharing, and reflective thinking in collaborative learning environments. Their research demonstrated that collaborative tools foster active participation by enabling students to co-create ideas and iteratively refine their work, transforming writing from an isolated activity into a dynamic, socially mediated process. Furthermore, Gaad (2022) revealed statistically significant improvements in student engagement through collaborative methodologies, showing marked increases in cooperation, interest, and participation. The current study's findings reinforce these conclusions by demonstrating that collaborative frameworks foster multidimensional engagement that addresses cognitive, social, and affective domains.

The high engagement levels observed have important implications for educational practice. High engagement across all dimensions suggests that collaborative techniques create intrinsic motivation that may persist beyond the immediate learning context. The minimal variability in engagement scores indicates that collaborative techniques effectively engage diverse learners, potentially addressing individual differences in learning preferences. The balanced engagement across behavioral, cognitive, affective, and emotional dimensions suggests that collaborative learning supports comprehensive student development beyond mere academic achievement.

Limitations and Future Research Directions

This study has several limitations. First, the quasi-experimental design relied on intact classes, limiting random assignment and generalizability. Second,

potential teacher effects cannot be fully ruled out. Third, engagement data were collected only from the experimental group, restricting comparative interpretation. Finally, reliance on self-reported engagement measures may introduce response bias.

Future research should employ randomized controlled designs, include engagement measures for both groups, and examine long-term retention and transfer of collaborative writing skills across genres and educational contexts.

Practical Recommendations

Educators are encouraged to integrate round-robin drafting with collaborative revision in paragraph writing instruction. Effective implementation requires small groups (four to five students), structured turn-taking, explicit peer-feedback guidelines, and instructor training in collaborative facilitation. Institutions should allocate sufficient class time and provide support for managing group dynamics. Potential challenges, such as unequal participation or time constraints, can be mitigated through clear role assignment and monitoring tools.

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