The Eurasia Proceedings of
Educational & Social Sciences (EPESS)
ISSN: 2587-1730

The Eurasia Proceedings of Educational and Social Sciences (EPESS), 2025

Volume 46, Pages 1-9

IConETE 2025: International Conference on Education in Technology and Engineering

The Effectiveness of Integrating Round Robin Brainstorming with Flipbook Technology on First-Year Students' Writing and Collaborative Skills

Fatma Atik Mulyani
Yogyakarta State University

Supartinah Supartinah
Yogyakarta State University

Octavian Muning Sayekti
Yogyakarta State University

Abstract: This study examined the effect of the Round Robin Brainstorming (RRB) technique supported by flipbook media on the writing and collaboration skills of first-year students at Yogyakarta University, Indonesia. A pretest–posttest experimental design was employed involving 42 participants to measure improvements before and after the intervention. During the treatment, students engaged in collaborative story writing using the RRB technique, where they sequentially contributed ideas and organized story elements through Flipbook-based visual media. The findings revealed a substantial improvement in both writing and collaboration skills. The average writing score increased from 68 in the pretest to 79 in the posttest, while the mean collaboration score rose from 67 to 79. The N-Gain analysis showed a moderate improvement in both writing skills (0.52) and collaboration (0.55), with a significant difference between pretest and posttest scores ($p < .05$). Students showed notable progress in organizing ideas, expanding vocabulary, and producing coherent narratives. Likewise, their collaboration skills—such as communication, teamwork, and shared responsibility—significantly improved as they participated actively in the group brainstorming process. Moreover, students reported higher confidence and motivation in writing as they collaboratively created well-structured digital storybooks. Overall, the study demonstrates that integrating collaborative brainstorming strategies with digital flipbook media effectively enhances creativity, teamwork, and writing performance. These findings provide empirical evidence that the RRB technique with flipbook media is a promising technology-enhanced model for improving students' writing and collaborative learning outcomes in higher education.

Keywords: Round Robin Brainstorming, Flipbook media, Writing skills, Collaboration, Digital learning

Introduction

Writing is a fundamental language skill that underpins students' academic achievement and professional communication. It enables learners to articulate ideas, organize their thoughts logically, and convey meaning effectively across both academic and real-world contexts (Harmer, 2020; Graham & Perin, 2020). Despite its central importance, writing is widely recognized as one of the most demanding language skills to master, particularly for university students who are transitioning into academic discourse. Many first-year students struggle to produce coherent, creative, and well-structured texts due to limited vocabulary, insufficient feedback, and lack of exposure to collaborative learning experiences (Kim et al., 2021; Rahmawati, 2022). Moreover, writing tasks require higher-order thinking, planning, and revising skills that can be overwhelming without adequate instructional support (Cahusac de Caux & Pretorius, 2024). These challenges highlight the need for

innovative and interactive instructional strategies that can foster writing competence, encourage collaboration, and sustain learner engagement. Integrating brainstorming-based techniques with digital media offers a promising pedagogical framework to cultivate creativity, teamwork, and continuous motivation in the writing process (Pham, 2021).

Collaborative learning has long been recognized as an effective approach for enhancing students' cognitive and social development. Grounded in the principles of social constructivism, it views knowledge as something co-constructed through interaction and shared meaning-making (Vygotsky, 1978). Such approaches promote learner engagement, mutual responsibility, and active participation, enabling students to build understanding together rather than working in isolation. Within this context, the Round Robin Brainstorming (RRB) technique has gained attention as a cooperative learning model that facilitates idea generation and equal participation. In RRB, students take turns contributing ideas in groups, ensuring that each member is actively involved in the discussion. This method encourages balanced participation, mutual respect, and accountability within the learning community (Naser & Almutairi, 2020).

Several empirical studies have confirmed the effectiveness of brainstorming techniques in language learning. For instance, Rahmawati (2022) demonstrated that the brainstorming technique used during pre-writing activities significantly improved students' ability to write descriptive texts. The study emphasized that structured idea generation helps students overcome writer's block and develop more coherent paragraphs. Similarly, Pham (2021) found that collaborative writing practices encourage learners to negotiate meaning, refine ideas through peer feedback, and enhance writing fluency and creativity. Such interaction helps learners co-construct meaning, reflect critically on their writing, and internalize linguistic forms in context. These findings reinforce the view that collaboration not only develops writing skills but also strengthens interpersonal communication, motivation, and problem-solving abilities.

Alongside pedagogical strategies, the integration of digital learning media has become increasingly important in the 21st-century educational landscape. The rapid advancement of digital technology provides educators with opportunities to combine innovative instructional models with multimedia resources to enhance learning outcomes. One of the emerging tools in this area is flipbook media, an interactive digital platform designed to simulate a real book by integrating text, images, animations, audio, and hyperlinks. flipbook media can be used both online and offline, providing a flexible and visually appealing learning experience (Mitha & Basri, 2024)

Research shows that digital flipbooks can increase student engagement, improve content comprehension, and encourage independent learning. Dewi et al. (2021) and Ristanto et al. (2020) found that flipbook-based instruction provides multimodal input that helps students visualize concepts, retain information longer, and connect abstract ideas with concrete representations. In addition, Mitha & Basri (2024) demonstrated that the use of flipbook media enhances students' creativity and imagination in writing imaginative descriptive paragraphs. The digital format encourages learners to explore visual storytelling and experiment with linguistic structures in an interactive way. Moreover, flipbook-based learning fosters students' motivation and active participation, as it allows them to design and edit content collaboratively, aligning well with the principles of constructivist and cooperative learning theories.

Despite the growing adoption of digital tools and collaborative learning techniques, limited empirical research has explored the integrated impact of the Round Robin Brainstorming (RRB) technique and flipbook media on students' writing skills and collaboration. Most previous studies have examined these elements separately—focusing either on the cognitive and social benefits of brainstorming or on the motivational effects of digital media integration. However, few investigations have analysed how the convergence of RRB and flipbook media might produce a synergistic effect that simultaneously enhances writing proficiency and collaborative learning behaviours among higher education students. For first-year university learners—who often face challenges transitioning from high school to academic writing—such an integration of interactive, cooperative, and technology-based strategies may offer an effective solution to bridge this gap.

Addressing this gap, the present study aims to examine the effect of the Round Robin Brainstorming technique supported by flipbook media on students' writing skills and collaboration. This integrated approach combines structured cooperative learning with digital visualization to foster creativity, teamwork, and engagement in writing instruction. It is expected that the implementation of RRB with flipbook media will help students organize ideas more effectively, expand their vocabulary use, and strengthen the quality of peer collaboration during writing activities. Furthermore, the study seeks to provide practical insights for educators in developing innovative, technology-enhanced pedagogies that promote active, meaningful, and collaborative learning in higher education contexts.

By examining how these two instructional components interact, the study contributes to the growing body of literature on digital-assisted collaborative learning. The findings are anticipated to offer both theoretical and practical contributions: theoretically, by expanding the understanding of technology-integrated cooperative learning; and practically, by offering educators an innovative framework that merges brainstorming strategies with interactive digital tools. Ultimately, this research underscores the pedagogical potential of integrating Round Robin Brainstorming and flipbook media as a comprehensive approach to enhancing writing competence and collaborative learning among university students in the digital era.

Method

Research Design

This study employed an experimental research approach using a pre-experimental design, specifically the one-group pretest–posttest design. The design was selected to examine the effectiveness of the Round Robin Brainstorming (RRB) technique assisted by flipbook media in enhancing students' writing skills and collaboration. Participants were given a pretest to measure their initial writing performance, followed by a six-session instructional intervention using the RRB model with flipbook media, and finally a posttest to determine improvements after treatment. Each session lasted approximately 90 minutes and was conducted once per week over a six-week period. This schedule provided sufficient time for students to reflect on feedback between meetings and to gradually develop their writing and collaboration skills. This duration allowed students to become familiar with the cooperative procedures and the use of digital flipbook tools in writing activities.

Participants

The participants of this study were 42 first-semester students enrolled in Class F of the Elementary School Teacher Education (PGSD) Department, Yogyakarta State University. The participants were selected purposively, as they had not previously received formal instruction in academic writing or collaborative learning models. All students completed both the pretest and posttest tasks and actively participated in all six instructional meetings.

Data Collection Technique

Data were collected through performance tests, observation sheets, and collaboration questionnaires. The performance tests consisted of a writing task administered during the pretest and posttest stages. Students were instructed to collaboratively compose a children's story based on the theme of fables that emphasize moral and character development, such as honesty, kindness, or responsibility. During the intervention, students engaged in brainstorming sessions using the RRB technique to generate story ideas and structure narrative elements through flipbook-based visual media. Writing performance was assessed using a rubric that included five key indicators:

1. relevance of content to the theme;
2. sentence structure;
3. spelling and punctuation;
4. neatness and organization; and
5. creativity and imagination in writing.

The observation sheets were used to monitor students' engagement and participation during the learning process, while the collaboration questionnaire measured students perceived teamwork, communication, and cooperation throughout the activity.

Data Analysis Technique

The data analysis involved both descriptive and inferential statistics. Descriptive statistics were used to summarize students' writing scores before and after the intervention. Inferential statistical analyses were then conducted to determine the significance of the treatment effects. The analyses included tests of normality and homogeneity, followed by paired-sample t-tests to compare pretest and posttest results. Additionally, the N-Gain

test was applied to measure the level of improvement in students' writing skills after the treatment. All analyses were conducted using SPSS, with a significance level set at $p < 0.05$.

Trustworthiness

To ensure the validity and reliability of the findings, several strategies were implemented. The research instruments, including the writing rubric and collaboration questionnaire, were validated by experts in language education and instructional media. Inter-rater reliability was established through consistency checks between two independent raters scoring the students' writing products. Furthermore, triangulation was applied by comparing results from the tests, observations, and questionnaires to confirm the consistency of data interpretation. These procedures strengthened the credibility and trustworthiness of the study's findings.

Results

Based on the students' writing performance scores in composing children's stories, both pretest and posttest results were obtained for the experimental class. The descriptive statistics of the students' scores are presented in Table 1

Table 1. Students' pretest and posttest scores in writing children's stories

Indicator	Pretest	Posttest
Highest Score	85	95
Lowest Score	55	65
Average Score	68	79

As shown in Table 1, the students' average scores increased after the implementation of the Round Robin Brainstorming (RRB) technique assisted by flipbook media. The mean pretest score was 68, while the mean posttest score rose to 79, indicating a notable improvement in students' writing skills. This finding suggests that integrating RRB with flipbook media effectively enhanced students' ability to generate ideas, organize their thoughts, and construct coherent narratives.

Before conducting the hypothesis test, a normality test was carried out to examine whether the data were normally distributed. Given that the number of participants was fewer than 50 ($n = 42$), the Shapiro–Wilk test was employed, as it is suitable for small sample sizes. The test results showed significant values (p) of $0.120 > 0.05$ for the pretest and $0.053 > 0.05$ for the posttest, indicating that both datasets were normally distributed. Thus, the assumption of normality was satisfied, allowing the use of parametric statistical analysis.

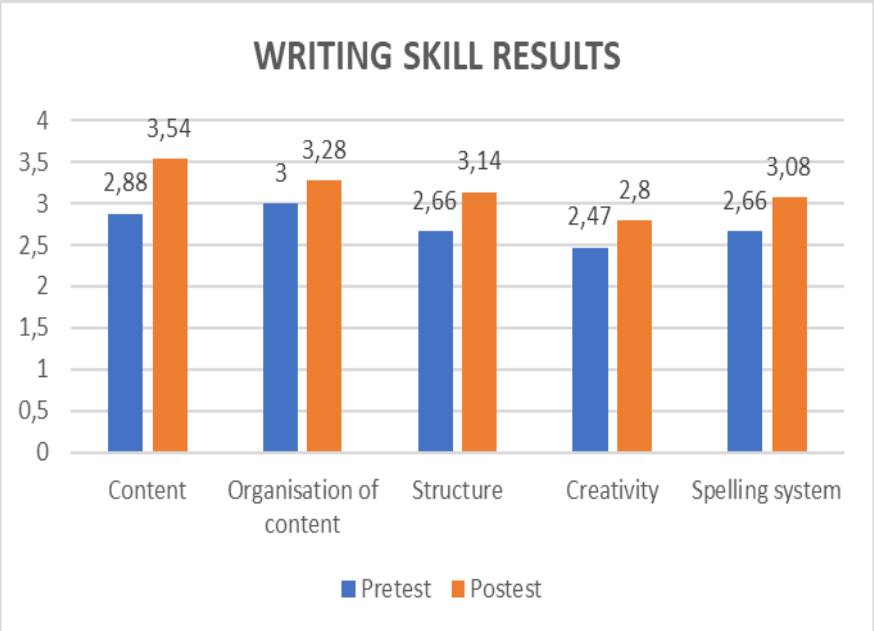

Figure 1. Comparison of students' writing performance across five indicators.

The figure illustrates the comparative results of students' writing skills across five key indicators: content, organization, sentence structure, creativity, and mechanics (spelling and punctuation). The bar chart shows that all aspects increased from the pretest (blue bars) to the posttest (red bars). Overall, there was a marked improvement in students' writing quality after the implementation of the RRB technique assisted by flipbook media. This demonstrates that the integration of collaborative brainstorming with digital visualization tools fostered creativity, coherence, and linguistic accuracy in students' written work. The N-Gain analysis yielded a score of 0.52, representing a moderate level of improvement in writing performance after six sessions of using the RRB technique with flipbook media. In addition to assessing students' writing performance, the researcher also conducted pretest and posttest evaluations on students' collaboration skills to examine the impact of the RRB technique assisted by flipbook media. The results of students' collaboration scores are presented in Table 2.

Table 2. Students' pretest and posttest scores in collaboration skills

Indicator	Pretest	Posttest
Highest Score	83	92
Lowest Score	48	63
Average Score	67	79

As shown in Table 2, students' collaboration skills improved after the implementation of the RRB model integrated with flipbook media. The average pretest score was 67, which increased to 79 in the posttest, demonstrating a meaningful enhancement in students' ability to cooperate, communicate, and work effectively within groups. The increase in collaboration scores indicates that the Round Robin Brainstorming approach created an interactive and inclusive environment where every student could contribute ideas and participate more actively. The flipbook media further supported teamwork by providing a shared digital space that encouraged creativity, interaction, and engagement during the collaborative writing process.

The Shapiro–Wilk normality test was also performed for the collaboration data, yielding significance values of $0.079 > 0.05$ for the pretest and $0.147 > 0.05$ for the post-test, confirming that both datasets were normally distributed. Consequently, a paired-sample t-test was conducted to determine whether the observed improvements in both writing skills and collaboration were statistically significant.

Table 3. Paired-sample t-test results for writing and collaboration skills (n = 42).

Variable	Mean Difference	t	df	p
Writing Skills	11.00	8.95	41	0.000
Collaboration Skills	12.00	9.12	41	0.000

The results revealed significant differences between the pretest and posttest scores for both writing and collaboration skills ($p < .05$). These findings indicate that the implementation of the RRB technique assisted by flipbook media had a statistically significant positive effect on students' performance.

In terms of writing skills, students showed notable progress in content organization, idea development, and creativity after participating in collaborative brainstorming sessions. The interactive and visual nature of the flipbook media allowed learners to better structure their stories and express ideas more coherently. These improvements suggest that integrating digital media into cooperative learning can strengthen students' writing fluency and narrative coherence.

Similarly, the paired-sample t-test results for collaboration skills also yielded a p value of $0.000 < 0.05$, confirming a significant increase after the implementation of the RRB model supported by flipbook media. The enhancement in collaboration can be attributed to the equal participation fostered through the Round Robin process, where each student contributed ideas sequentially, and to the shared use of Flipbook materials, which facilitated joint task engagement and collective creativity. The N-Gain score of 0.55 indicates a moderate improvement in students' ability to work together, communicate effectively, and share responsibility during group writing activities.

Overall, the statistical findings confirm that the integration of collaborative brainstorming and digital flipbook media effectively enhanced both students' writing competence and their ability to work cooperatively in group learning settings. These results highlight that the combined use of the RRB model and flipbook media significantly strengthened both cognitive and social learning outcomes.

Discussion

The Impact of the Round Robin Brainstorming (RRB) Model Using Flipbook Media on Writing Skills

The findings of this study revealed that the implementation of the Round Robin Brainstorming (RRB) model assisted by flipbook media significantly improved students' writing skills. The increase in the posttest mean score from 68 to 79 indicated that students developed greater competence in generating ideas, organizing narratives, and constructing coherent stories. The paired-sample t-test results confirmed that this improvement was statistically significant ($p < 0.05$), indicating that the RRB model supported by flipbook media had a meaningful effect on students' writing performance. This suggests that combining a collaborative brainstorming approach with digital media can effectively enhance students' engagement and creativity in writing.

The RRB model enabled each participant to contribute ideas in turn, ensuring that all students were equally engaged in the writing process. This structured form of collaboration encouraged learners to refine their thoughts through peer feedback and fostered a shared sense of ownership over the group's written work. These findings are consistent with Amoush (2023), who found that the RRB technique enhances student engagement, cooperation, and writing organization in EFL contexts. Similarly, Svenlin & Jusslin (2023) reported that structured brainstorming activities promote equitable participation and stimulate creativity in group writing, aligning closely with the results of this study.

Integrating flipbook media further strengthened students' writing performance. The visual and interactive features of flipbooks helped learners conceptualize story structures, visualize scenes, and maintain narrative coherence throughout the writing process. This result corroborates the findings of Eliyasni et al. (2021), who concluded that flipbook -based materials enhance motivation and comprehension by presenting content through engaging and multimodal formats. Likewise, Hasibuan et al. (2024) demonstrated that Flipbook media facilitate deeper understanding through visual representation, creating more meaningful learning experiences.

Further evidence from other studies reinforces these findings. For instance, Fitriya & Nuroh (2025) revealed that digital flipbook media significantly improve creativity and idea organization among primary school learners, while Waluyo et al. (2024) reported that Flipbook-based learning materials increase writing accuracy and learner engagement in vocational high school settings. These parallel outcomes across educational levels confirm that flipbook media contribute not only to learning motivation but also to tangible improvements in writing quality and organization.

Overall, the combination of the RRB model and flipbook media created a supportive and interactive learning environment that encouraged students to explore ideas collaboratively, reflect critically on their writing, and express creativity more confidently. The results affirm that technology-enhanced collaborative techniques can effectively foster writing fluency, narrative organization, and creativity in higher education contexts.

The Impact of the Round Robin Brainstorming (RRB) Model Using Flipbook Media on Collaboration Skills

In addition to improving writing skills, this study also found a notable increase in students' collaboration skills after the implementation of the RRB model assisted by flipbook media. The average collaboration score rose from 67 in the pretest to 79 in the post-test, demonstrating that the learning process effectively enhanced students' ability to cooperate, communicate, and share responsibilities in group work. The results of the paired-sample t-test showed a significant difference between pretest and post-test scores ($p < 0.05$), confirming that the RRB model integrated with flipbook media had a positive impact on students' collaborative competence.

The RRB model provided a structured mechanism that required every student to participate more actively and contribute ideas during brainstorming sessions. This structure reduced dominance by certain individuals and ensured balanced participation, thereby fostering mutual respect and teamwork. Amoush (2023) noted that the RRB approach promotes accountability among group members, leading to greater peer interaction and cooperation. The present findings support this observation, as students became more confident in sharing ideas, giving feedback, and taking collective responsibility for the group's written work.

These findings are consistent with recent studies emphasizing the pedagogical value of collaborative learning. Bai et al. (2025) showed that collaborative learning fosters engagement, critical thinking, and deep understanding through shared dialogue and collective meaning-making. Likewise, Latorre-Cosculluela et al.

(2025) highlighted that interactive instructional strategies stimulate cooperative learning and create more positive group dynamics in classrooms. In a similar vein, Mostafa et al. (2025) demonstrated that participation in team-based learning environments improves communication skills and strengthens collaborative practices. Furthermore, Schürmann et al. (2025), through a quasi-experimental study, confirmed that reflective group interventions such as debriefing enhance collaboration, performance, and overall learning outcomes. Collectively, these studies indicate that collaboration is not merely a social skill but a critical component that directly supports learning achievement.

The use of flipbook media also played a significant role in supporting collaborative development. The digital platform enabled students to co-create and edit content in real time, fostering open communication, negotiation, and shared decision-making. This finding aligns with Mitha and Basri (2024), who found that digital Flipbooks promote student engagement and collaborative learning through interactive storytelling tasks. Similarly, Hasibuan et al. (2024) emphasized that flipbook media enhance learner autonomy and coordination, which are essential for productive teamwork. Moreover, digital collaboration supported by structured roles and meaningful feedback contributes to deeper cognitive and social engagement. Feng et al. (2025) found that assigning structured roles in group activities and providing in-depth feedback effectively enhance both behavioral and cognitive engagement—factors that in turn improve comprehension and cooperative performance. Through the integration of the RRB model and flipbook media, students not only improved their academic skills but also developed essential 21st-century competencies such as communication, collaboration, and creativity. These findings reinforce the perspective that technology-supported collaborative learning environments can enhance both cognitive and social dimensions of learning, aligning with the growing emphasis on student-centered and digitally integrated pedagogy in higher education.

Conclusion

The study concludes that integrating the Round Robin Brainstorming (RRB) technique with flipbook media significantly improved students' writing and collaboration skills. The average writing score increased from 68 to 79, while the collaboration score rose from 67 to 79, indicating consistent progress in both areas. These results demonstrate that combining collaborative brainstorming with digital visualization effectively enhances students' ability to generate ideas, organize content, and produce coherent and creative written work. Moreover, the findings suggest that this integrated model not only strengthens linguistic competence but also fosters interpersonal growth, teamwork, and motivation in group learning contexts. The findings of this study also provide several practical implications for language teachers and educators. Integrating the RRB technique with flipbook media proved to be an effective approach for developing students' writing and collaboration skills simultaneously. In classroom practice, this model encourages students to take an active role in learning, exchange ideas with peers, and express their thoughts creatively. Through group discussions and shared digital tasks, students learn to organize their ideas, use language more accurately, and build stronger teamwork. For teachers, this approach offers guidance in designing engaging and interactive writing activities. Flipbook media allows learners to visualize their stories, revise content collaboratively, and take pride in producing creative digital storybooks. Meanwhile, the RRB technique ensures that every student participates equally, which helps promote cooperation, mutual respect, and responsibility within the group.

Overall, this study highlights that combining collaborative learning strategies with digital media can make writing instruction more meaningful and enjoyable. It aligns language learning with 21st-century educational goals—enhancing students' communication, creativity, collaboration, and digital literacy. Future educational practices should therefore consider embedding collaborative digital strategies like RRB with flipbook media to prepare learners for the communicative and creative demands of the digital age

Recommendations

Based on the findings of this study, several recommendations are proposed for future practice and research. First, language teachers are encouraged to implement the Round Robin Brainstorming (RRB) technique integrated with flipbook media in writing classes to promote students' active participation, creativity, and collaboration. This model can be adapted for various types of writing—such as narrative, descriptive, and expository texts—to achieve broader learning outcomes and to make writing instruction more engaging and student-centered. Second, teacher education programs and professional development workshops should incorporate digital and collaborative teaching models like RRB with flipbook media. Integrating such approaches into teacher training will help educators strengthen their digital pedagogical competence and gain

practical experience in facilitating interactive and technology-enhanced learning environments. Third, future researchers are encouraged to replicate or expand this study with larger and more diverse samples, involving students from different universities or educational levels. Further studies could also explore the long-term impact of RRB and flipbook media on students' writing fluency, creativity, and digital literacy. Incorporating qualitative methods—such as interviews or reflective journals—would provide deeper insights into learners' experiences and perceptions of collaborative digital writing. In summary, sustained research and classroom application of the RRB model supported by flipbook media will continue to contribute to the development of innovative, interactive, and technology-driven approaches to language education that align with 21st-century learning goals.

Scientific Ethics Declaration

* The authors declares that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

Conflict of Interest

* The authors declare that they have no conflicts of interest

Funding

* This research was funded by the Indonesian Education Scholarship (Beasiswa Pendidikan Indonesia – BPI) through the Center for Higher Education Funding and Assessment (PPAPT), Ministry of Higher Education, Science, and Technology of the Republic of Indonesia, and the Education Fund Management Institute (LPDP).

Acknowledgements or Notes

* This article was presented as an oral presentation at the International Conference on Education in Technology and Engineering (www.iconete.net) held in Antalya/Türkiye on November 12-15, 2025.

*The authors would like to express their sincere gratitude to the Indonesian Education Scholarship (Beasiswa Pendidikan Indonesia – BPI) and the Education Fund Management Institute (LPDP) under the Ministry of Higher Education, Science, and Technology of the Republic of Indonesia for providing financial support for this research.

*Appreciation is also extended to Yogyakarta State University (Universitas Negeri Yogyakarta) for its academic guidance and institutional support, as well as to the students of Class F, Department of Primary Education, for their participation and collaboration during the study.

References

Amoush, K. H. (2015). The ımpact of employing brainstorming strategy on ımproving writing performance of english major students at Balqa Applied University in Jordan. *Journal of Education and Practice*, *6*(35),88–92.

Bai, B., Zang, X., & Guo, W. (2025). Hong Kong students' motivational beliefs and emotions in collaborative learning in ESL classrooms: influences of actual and self-perceived English proficiency. *Social Psychology of Education*, *28*, 14.

Cahusac de Caux, B., & Pretorius, L. (2024). Learning together through collaborative writing: The power of peer feedback and discussion in doctoral writing groups. *Studies in Educational Evaluation*, *83*, 101379.

Eliyasni, R., Habibi, M., Rahmatina, & Azima, N. F. (2021). E-module flipbook model for designing e-learning materials in higher education. *Proceedings of the 2nd Progress in Social Science, Humanities and Education Research Symposium (PSSHERS 2020)*, *563*, 17–23.

Feng, Q., Li, W., Zhu, X., & Li, X. (2025). Exploring the effects of elaborated and motivational feedback on

learning engagement in online scripted role discussion. *International Journal of Educational Technology in Higher Education*, *22*(1).

Fitriya, L., & Nuroh, E. Z. (2025). Digital flipbook media ımproves writing skills in primary schools : Media buku elektronik ınteraktif meningkatkan keterampilan menulis di sekolah dasar. *Indonesian Journal of Education Methods Development20*(4), 1–7.

Harmer, J. (2020). *How to teach writing.* Pearson Education.

Hasibuan, S., Kasih, I., Daulay, D. E., Sinulingga, A., & Fahrian, M. A. (2024). Development of flip book-based learning media for sports physiology in physical education students at university. *AL-ISHLAH: Jurnal Pendidikan*, *16*(2), 1361–1373.

Hyland, K. (2019). *Second language writing* (2nd ed.). Cambridge University Press.

Kim, Y. S. G., Yang, D., Reyes, M., & Connor, C. (2021). Writing instruction improves students' writing skills differentially depending on focal instruction and children: A meta-analysis for primary grade students. *Educational Research Review*, *34*, 100408.

Latorre-Cosculluela, C., Sierra-Sánchez, V., & Vázquez-Toledo, S. (2025). Gamification, collaborative learning and transversal competences: Analysis of academic performance and students' perceptions. *Smart Learning Environments*, *12*(1), 1-17.

Mitha, E. D., & Basri, A. (2024). The effect of using flipbook media on ımaginative description paragraph writing skills in elementary school students. *Edunesia : Jurnal Ilmiah Pendidikan*, *5*(3), 1271–1281.

Mostafa, S. K., Abdel-Rahman, R. H., Mansour, A. K., & El-Sherbeny, M. A. (2025). Fostering collaborative practice: A pilot study on interprofessional education through simulation-based team-oriented learning sessions among pharmacy and medical students. *Discover Education*, *4*(1), 19.

Naser, A., & Almutairi, M. (2015). The effect of using brainstorming strategy in developing creative problem solving skills among male students in Kuwait : A field study on Saud Al-Kharji school in Kuwait city. *Journal of Education and Practice*,*6*(3), 136–146.

Pham, V. P. H. (2021). The effects of collaborative writing on students' writing fluency: an efficient framework for collaborative writing. *SAGE Open*, *11*(1).

Rahmawati, E. (2022). Effect of brainstorming technique as a pre-writing activity on the students' achievement in writing descriptive text. *Journal Corner of Education, Linguistics, and Literature*, *2*(1), 38–43.

Ristanto, R. H., Rusdi, Mahardika, R. D., Darmawan, E., & Ismirawati, N. (2020). Digital flipbook ımunopedia (dfı) a development in ımmune system e-learning media. *International Journal of Interactive Mobile Technologies*, *14*(19), 140–162.

Schürmann, V., Bodemer, D., & Marquardt, N. (2025). Applying debriefings in the context of higher education: How joint reflection fosters students' collaborative problem solving. In *Social psychology of education* (Vol. 28, Issue 1). Springer Netherlands.

Svenlin, M., & Jusslin, S. (2023). Thinking brainstorming as otherwise in collaborative writing: A rhizoanalysis. *Linguistics and Education*, *77*, 101218.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Harvard University Press.

Waluyo, Meida Rabia Sihite, & Widia Fransiska. (2024). Developing digital flipbook-based english writing materials for efl vocational high school students. *Journal of Language and Literature Studies*, *4*(4), 810–822.

Wei, Y., & Liu, D. (2024). Incorporating peer feedback in academic writing: A systematic review of benefits and challenges. *Frontiers in Psychology*, *15*, 1506725.

Author(s) Information

Fatma Atik Mulyani
Yogyakarta State University
Jl. Colombo No. 1, Karangmalang, Yogyakarta, Indonesia
Contact e-mail: *fatmaatikmulyani18@gmail.com*

Supartinah Supartinah
Yogyakarta State University
Jl. Colombo No. 1, Karangmalang, Yogyakarta, Indonesia

Octavian Muning Sayekti
Yogyakarta State University
Jl. Colombo No. 1, Karangmalang, Yogyakarta, Indonesia

To cite this article:

Mulyani, F. A., Supartinah, S. & Sayekti, O. M. (2025). The effectiveness of integrating Round Robin Brainstorming with flipbook technology on first-year students' writing and collaborative skills. *The Eurasia Proceedings of Educational and Social Sciences (EPESS), 46,* 1-9.