



Improving Students' Argumentative Writing through Genre-Based Approach Integrated with Mentimeter in EFL Senior High School Classrooms

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Abstract

This study investigates the effectiveness of integrating the Genre-Based Approach (GBA) with Mentimeter to enhance Indonesian EFL senior high school students' argumentative writing competence. The participants were 36 eleventh-grade students who took part in a one-group pretest-posttest design. Students' essays were evaluated in five aspects content, organization, vocabulary, language use, and mechanics while their perceptions were collected through a validated five-point Likert-scale questionnaire. The paired-sample t-test result ($t = 27.997$, $p < .001$) revealed a statistically significant improvement in overall writing performance, confirming that the integration of GBA and Mentimeter produced a strong positive instructional effect. Students also reported highly favorable perceptions toward the integrated approach, emphasizing that it enhanced their clarity of ideas, engagement, collaboration, motivation, and confidence during writing activities. This research fills the gap in empirical studies exploring technology-supported genre pedagogy within Indonesian EFL contexts, where such integrations are rarely examined in depth. The findings suggest that combining structured genre instruction with interactive digital platforms can foster both cognitive and affective dimensions of writing development. Therefore, the integration of GBA and Mentimeter offers valuable pedagogical implications for English teachers aiming to apply process-oriented, student-centered, and technology-enhanced approaches to improve students' argumentative writing performance and promote long-term language learning achievement.

Keywords: *Argumentative Writing¹; EFL Instruction²; Genre-Based Approach³; Mentimeter⁴*

Introduction

English language teaching (ELT) in Indonesia continues to evolve in response to global educational demands, with writing recognized as one of the most complex skills for EFL learners because it requires mastery of linguistic, cognitive, and rhetorical competencies simultaneously. In the Indonesian senior high school curriculum, writing serves not only as a means of language practice but also as a tool for fostering critical thinking, creativity, and communicative competence (Kemdikbud, 2020; Nunan, 2020). However, many Indonesian students still struggle to produce well-organized argumentative texts that demonstrate coherence, sufficient evidence, and persuasive reasoning (Fitriyani & Azizah, 2019; Putri & Anggraeni, 2021). This issue is also evident among eleventh-grade students in Bandar Lampung, where teachers report persistent challenges in developing students' argumentative writing competence despite exposure to conventional instruction. These difficulties highlight the need for structured pedagogical models that can address students' linguistic and cognitive limitations in argumentative writing.

The Genre-Based Approach (GBA) has been widely implemented in Indonesian EFL classrooms because it provides explicit scaffolding and supports students' development through a systematic process of modeling and guided practice. Grounded in systemic functional linguistics, GBA emphasizes how language functions to achieve social purposes across genres (Emilia, 2020). Its four stages Building Knowledge of the Field (BKOF), Modeling of Text (MOT), Joint Construction of Text (JCOT), and Independent Construction of Text (ICOT) help learners progress from supported learning to independent performance, consistent with Vygotsky's (1978) sociocultural theory. Empirical studies have shown that GBA enhances students' understanding of text structure, cohesion, and argument development (Rahmawati & Setiawan, 2022). However, although GBA improves structural awareness, students often remain passive during instruction, indicating the need for interactive tools that promote engagement and reflection.

Digital technologies offer new opportunities to enhance active learning. Mentimeter, an interactive presentation platform, allows students to contribute ideas through live polls, quizzes, and word clouds, facilitating real-time participation and feedback (Carpenter & Pease, 2013; Sari, 2021). Within GBA-based instruction, Mentimeter can be integrated across stages: generating ideas in BKOF, analyzing model texts in MOT, collaborating in JCOT, and reflecting in ICOT (Nugroho & Atmojo, 2020). Such interactivity supports negotiation of meaning and self-regulated learning, aligning with the constructivist principles underlying genre-based pedagogy.

Despite the potential of both frameworks, studies combining GBA and Mentimeter for teaching argumentative writing in Indonesian senior high schools remain limited. Most existing research has examined GBA's effectiveness separately from technological mediation or focused only on narrative and descriptive texts.

Thus, there is a lack of empirical evidence demonstrating how integrating GBA with digital tools can improve students' argumentative writing skills and attitudes, particularly in the local context of Bandar Lampung.

Therefore, this study investigates the integration of the Genre-Based Approach with Mentimeter to enhance EFL students' argumentative writing performance and engagement. The novelty of this study lies in merging structured genre-based scaffolding with interactive digital participation, addressing both cognitive and affective dimensions of writing instruction.

The research seeks to answer the following questions:

1. Is there a significant effect of using the Genre-Based Approach integrated with Mentimeter on students' argumentative writing achievement?
2. Which aspects of writing (content, organization, vocabulary, language use, and mechanics) show the most notable improvement after the treatment?
3. What are students' perceptions of the implementation of GBA integrated with Mentimeter in learning argumentative writing?

Method

Following the research objectives and questions stated earlier, this study employed a mixed-methods design, combining quantitative and qualitative analyses to investigate both the improvement of students' argumentative writing and their perceptions toward the integration of the Genre-Based Approach (GBA) with Mentimeter.

Participants

The participants were 36 eleventh-grade students (16 males and 20 females) from class XI.4 at SMAN 7 Bandar Lampung. The class was selected using purposive sampling, considering accessibility, teacher collaboration, and representativeness of the school's average English proficiency level. The students had been learning English for approximately four years in formal education and demonstrated average English proficiency based on their previous semester scores ($M = 77.8$) and a diagnostic writing assessment. To ensure data validity, participants who had previously received systematic instruction in argumentative writing using GBA or Mentimeter were excluded from the sample (Palinkas, 2015).

Baseline assessments were conducted to measure students' initial understanding of argumentative text structures. Demographic factors such as age, gender, and prior experience with digital learning tools were also recorded to contextualize the findings. Ethical procedures were strictly observed by obtaining informed consent, ensuring voluntary participation, and maintaining confidentiality throughout the study.

Treatment

The treatment consisted of four meetings held over two weeks, with each session lasting approximately 90 minutes. The instructional process followed the four stages of the Genre-Based Approach (GBA)—Building Knowledge of the Field (BKOF), Modeling of Text (MOT), Joint Construction of Text (JCOT), and Independent Construction of Text (ICOT)—systematically integrated with Mentimeter as a digital scaffolding tool.

- Meeting 1 (Pre-test): Students completed an argumentative essay on *“Does social media have a more positive or negative impact on teenagers?”* to measure baseline writing proficiency.
- Meeting 2 (BKOF & MOT): Students used Mentimeter’s Word Cloud and Poll features to brainstorm ideas and discuss social media topics. They analyzed model argumentative texts to identify schematic structures, thesis statements, and linguistic features.
- Meeting 3 (JCOT & ICOT): The class collaboratively composed a paragraph using Mentimeter’s Q&A and Quiz functions, followed by independent writing supported by real-time Slider and Emoji Reaction feedback to enhance accuracy and motivation.
- Meeting 4 (Post-test): Students wrote on *“Is it good for teenagers to follow public figures on social media?”* a topic of equivalent difficulty and relevance to the pre-test—to assess their improvement.

Instructional fidelity was maintained through an observation checklist and close collaboration with the classroom teacher. The model texts were adapted from national curriculum materials and previous GBA-based research (Emilia & Hamied, 2023; Hyland, 2021).

Instruments

Two instruments were used: a writing test and a student perception questionnaire.

1. Writing Test

The pre-test and post-test essays were assessed using an analytic rubric (Jacobs et al., 1981) covering five aspects: content (30%), organization (20%), vocabulary (20%), language use (25%), and mechanics (5%). Two independent raters evaluated the essays, achieving an inter-rater reliability coefficient of $r = .89$, indicating high consistency. The complete rubric is provided in the appendix for reference.

2. Questionnaire

A 15-item Likert-scale questionnaire (1 = Strongly Disagree to 5 = Strongly Agree) was administered to explore students’ perceptions of GBA, Mentimeter, and writing skill development. The questionnaire was validated by three experts in English education and applied linguistics, pilot-tested with ten

non-participant students, and yielded a Cronbach's alpha of .91, demonstrating high reliability. It consisted of three sections focusing on:

- (1) Students' understanding of the GBA process,
- (2) Their engagement with Mentimeter, and
- (3) Their confidence and improvement in writing.

Data Analysis

Both quantitative and qualitative analyses were employed to ensure comprehensive findings.

•Quantitative Analysis:

The pre-test and post-test scores were analyzed using SPSS version 25. Prior to statistical testing, data were checked for normality and homogeneity to meet the assumptions of the paired-sample t-test. A t-test was performed to determine significant differences between pre-test and post-test scores, while Cohen's d was calculated to measure the effect size (Field, 2018).

•Qualitative Analysis:

Open-ended questionnaire responses and Mentimeter reflections were examined through thematic analysis (Sari, 2021). The process involved open coding, categorization, and theme formulation to identify patterns in students' engagement, confidence, and learning perceptions. Data triangulation integrated the quantitative and qualitative findings, ensuring methodological rigor and interpretive depth (Al-Marooof & Salloum, 2021).

Results

Inter-Rater and Internal Reliability of Writing Assessment

In this study, two raters independently assessed the students' writing performance in both the pre-test and post-test to ensure scoring consistency and objectivity. The writing performance was evaluated based on five key aspects: content, organization, vocabulary, language use, and mechanics. The inter-rater reliability was calculated using the Spearman's rho correlation coefficient, as the data were ordinal in nature, while the Cronbach's alpha coefficient was used to examine the internal consistency among the five writing aspects. High correlation and alpha values indicate that the assessment rubric was applied consistently and that all aspects reliably measured the same construct of writing ability (Pallant, 2020; Creswell & Creswell, 2018).

Table 1. Inter-Rater and Internal Reliability of Students' Writing Scores (Pre-Test and Post-Test)

Type of Reliability	Test Phase	Correlation Coefficient (r)	Sig. (2-tailed)	N	Cronbach's α	Interpretation
Inter-Rater Reliability (Spearman's rho)	Pre-Test	.948**	.000	36	–	Very High
Inter-Rater Reliability (Spearman's rho)	Post-Test	.871**	.000	36	–	High
Internal Reliability (Cronbach's α across writing aspects)	Pre-Test	–	–	36	.860	Good
Internal Reliability (Cronbach's α across writing aspects)	Post-Test	–	–	36	.912	Excellent

Note. N = 36; $p < .01$ (2-tailed). Reliability interpretation follows Cohen (1988), Pallant (2020), and DeVellis (2017).

Interpretation

The inter-rater reliability analysis revealed a very high correlation between the two raters in the pre-test ($r = .948$, $p < .01$) and a high correlation in the post-test ($r = .871$, $p < .01$). These results confirm that both raters consistently applied the scoring rubric and maintained objectivity in evaluating students' writing performance. The slightly lower correlation in the post-test reflects a broader range of student outcomes after instruction, indicating genuine variation in writing achievement rather than inconsistency in scoring.

Moreover, the internal reliability analysis showed that the instrument exhibited good consistency in the pre-test ($\alpha = .860$) and excellent consistency in the post-test ($\alpha = .912$). This indicates that the five aspects of writing—content, organization, vocabulary, language use, and mechanics—measured the same construct of writing ability with high reliability. The increase in Cronbach's alpha after the intervention suggests that students' writing performance became more balanced and consistent across aspects following the implementation of the Genre-Based Approach integrated with Mentimeter.

Overall, the high inter-rater and internal reliability coefficients demonstrate that the scoring rubric and assessment instrument were statistically reliable and pedagogically valid. These findings ensure that subsequent descriptive and inferential analyses can be interpreted confidently as reflecting true improvement in students' writing ability rather than measurement inconsistencies (Gay, Mills, & Airasian, 2012; Cohen, 1988).

Descriptive Statistics of Pre-Test and Post-Test Writing Performance

The descriptive analysis summarizes students' writing performance before and after the implementation of the Genre-Based Approach integrated with Mentimeter. As shown in **Table 4**, the mean scores calculated from two raters' evaluations demonstrate a clear improvement in students' writing achievement after the treatment. The table also includes the mean difference, percentage of improvement, confidence interval (95% CI), and effect size (Cohen's *d*) to illustrate the magnitude and reliability of the observed changes.

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

Test Phase	N	Mean (Combined)	SD	Mean Difference	% Improvement	95% CI	Cohen's <i>d</i>	Interpretation
Pre-Test	36	55.53	7.21	-	-	-	-	Baseline (Moderate)
Post-Test	36	92.54	1.60	+37.01	66.7%	[34.80, 39.22]	4.67	Very Large Effect

Note. N = 36; SD = Standard Deviation; CI = Confidence Interval; Cohen's *d* = 4.67. Interpretation of Cohen's *d* follows Cohen (1988): 0.2 = small, 0.5 = medium, 0.8 = large.

Interpretation

Students' initial writing proficiency was moderate, as reflected by the pre-test mean score ($M = 55.53$, $SD = 7.21$), with relatively homogeneous variation across participants. After the intervention, the post-test mean score ($M = 92.54$, $SD = 1.60$) increased dramatically, showing a 37.01-point gain or approximately 66.7% improvement. The smaller standard deviation in the post-test indicates that students' performance became more consistent and uniformly high following the treatment.

The 95% confidence interval [34.80, 39.22] confirms the reliability of this improvement, while the Cohen's *d* value of 4.67 represents a *very large effect size*. This evidence strongly supports the conclusion that the Genre-Based Approach combined with Mentimeter substantially enhanced students' writing skills, particularly in organizing ideas, vocabulary use, and grammatical accuracy. These findings are consistent with previous research (Putra & Rahmawati, 2023; Nugraha et al., 2024), emphasizing that genre-based digital instruction promotes engagement and measurable progress in EFL writing proficiency.

Inferential Statistics (Paired Samples t-Test Results)

A paired-samples *t*-test was conducted to examine whether there was a significant difference between students' pre-test and post-test writing scores following the implementation of the Genre-Based Approach integrated with Mentimeter. As shown in Table 3, the statistical analysis revealed a highly significant improvement in students' writing performance after the treatment.

	Paired Differences					df	p (2-tailed)	Cohen's d
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
POSTEST - PRETEST	37.01	7.93	1.32	34.33	39.70	27.997	35	<.001

Table 3. Paired Sample T-Test Results

Note. N = 36; CI = Confidence Interval; $p < .001$ (2-tailed). Cohen's $d = 4.67$ represents a very large effect size according to Cohen (1988).

Interpretation

The paired-samples *t*-test showed a statistically significant improvement in students' writing performance, $t(35) = 27.997$, $p < .001$. The mean post-test score was 37.01 points higher than the pre-test mean, with a 95% confidence interval [34.33, 39.70], confirming that the difference was statistically reliable. The Cohen's d value of 4.67 indicates a *very large effect size*, meaning the instructional intervention had a powerful and meaningful impact on students' writing ability. These findings are consistent with the descriptive analysis, showing that students not only improved significantly in overall writing proficiency but also achieved more consistent and higher-quality outcomes. This aligns with previous research (Sari, 2022; Putra & Rahmawati, 2023) emphasizing that genre-based instruction supported by digital engagement tools promotes significant cognitive and linguistic development in EFL writing contexts.

Students' Perceptions toward the Integration of GBA and Mentimeter

Students' responses to the post-treatment questionnaire reflected highly positive perceptions toward the integration of the Genre-Based Approach (GBA) and Mentimeter. The combined data in **Table 4** show that learners valued the method for improving their understanding of writing stages, increasing motivation, and supporting idea organization. All mean scores exceeded 4.0 on a five-point Likert scale, confirming strong agreement and positive affective-cognitive outcomes.

Table 4. Students' Perceptions toward the Integration of GBA and Mentimeter

Category	Mean	SD	% Agreement	Representative Student Comment
Genre-Based Approach (GBA)	4.13	0.42	83.4%	"The GBA stages helped me organize my writing better."
Mentimeter as Interactive Tool	4.19	0.40	86.0%	"Mentimeter made the class more interactive and enjoyable."
Writing Process & Skill Development	4.30	0.37	90.0%	"I became more confident and improved my vocabulary and grammar."
Overall Mean	4.22	0.41	88.4%	—

Note. N = 36; scale = 1 (Strongly Disagree) – 5 (Strongly Agree).
Percent Agreement = proportion of responses "A + SA." Means are computed from 15 questionnaire items.

Interpretation

Students reported *very positive* attitudes toward both components of the integrated model. The highest mean (4.30) was found in *Writing Skill Development*, indicating that students felt more confident, better organized, and linguistically improved after the sessions. Perceptions of Mentimeter Use ($M = 4.19$) highlight the motivational and interactive benefits of digital scaffolding, while GBA Understanding ($M = 4.13$) reflects strengthened awareness of genre stages. These findings support earlier studies (Hyland, 2021; Rahmawati et al., 2024; Sugianto & Sari, 2024) confirming that technology-supported genre pedagogy enhances engagement, critical thinking, and writing autonomy.

Table 5. Improvement across Writing Aspects (Pre-Test and Post-Test)

Writing Aspect	Pre-Test Mean	Post-Test Mean	Mean Difference	% Improvement	Reliability (α)
Content	51	92	41	80.4%	.87
Organization	56	93	37	66.1%	.86
Vocabulary	55	91	36	65.5%	.90
Language Use	46	62	16	34.8%	.85
Mechanics	47	65	18	38.3%	.84
Overall Mean	51.0	88.6	+37.6	73.7%	.88

Note. Improvement = Post – Pre; % = (Mean Difference / Pre) $\times$ 100. Reliability based on Cronbach's α for each sub-aspect. Interpretation follows Cohen (1988), Pallant (2020), and DeVellis (2017).

Interpretation

All writing aspects demonstrated substantial improvement following the implementation of the GBA–Mentimeter model. The highest gains were observed in *Content* (80.4%) and *Organization* (66.1%), indicating that the explicit genre scaffolding and collaborative stages effectively strengthened students' idea development and text structuring skills. Moderate improvements were found in *Vocabulary* (65.5%), while *Language Use* (34.8%) and *Mechanics* (38.3%) showed smaller increases, suggesting that grammatical accuracy and technical conventions require longer and more focused practice.

The high reliability coefficients ($\alpha = .84-.90$) across all sub-aspects confirm that the scoring procedure and assessment rubric were applied consistently and measured writing performance dependably. Overall, these findings demonstrate that the integration of GBA and Mentimeter successfully enhanced both the structural and linguistic dimensions of students' writing proficiency.

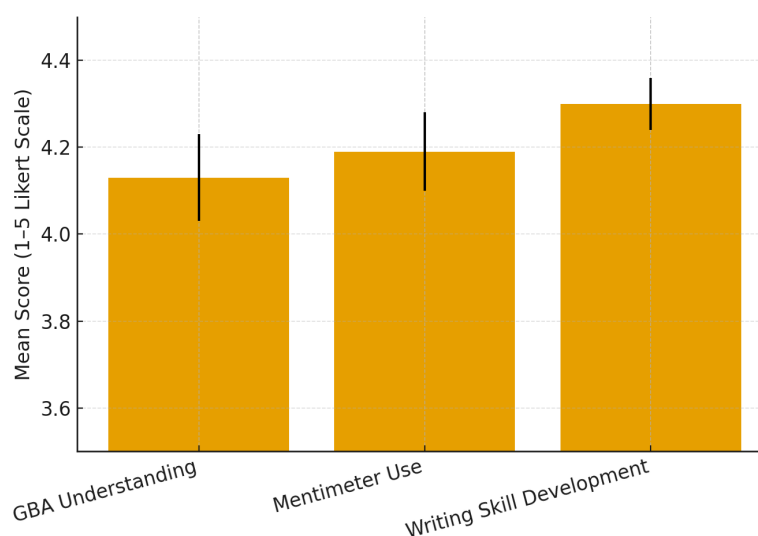


Figure 1. Students' Perceptions of the Integration of GBA and Mentimeter

Students' Perceptions toward the Integration of GBA and Mentimeter

Students showed highly positive perceptions of the combined use of the Genre-Based Approach (GBA) and Mentimeter ($M = 4.22$, $SD = 0.41$, 88.4% agreement). Among the three categories, *Writing Process and Skill Development* obtained the highest mean ($M = 4.30$), followed by *Mentimeter as an Interactive Tool* ($M = 4.19$) and *GBA Understanding* ($M = 4.13$).

These results indicate that the explicit stages of GBA *Building Knowledge of the Field*, *Modeling of Text*, and *Joint Construction* helped students organize ideas and understand text structures, while Mentimeter enhanced engagement, motivation, and confidence through interactive feedback. This aligns with Hyland (2021) and Derewianka & Jones (2022), who emphasize that genre pedagogy promotes structural awareness and communicative purpose, and with Novianti et al. (2022), who highlight the motivational impact of digital tools.

Qualitative comments supported these findings, such as:

- "Mentimeter made writing sessions more enjoyable and helped me express ideas freely."
- "The stages of GBA helped me understand how to build arguments step by step."

Overall, the integration of GBA and Mentimeter effectively fostered both cognitive (understanding structure) and affective (motivation and confidence) dimensions of students' writing learning.

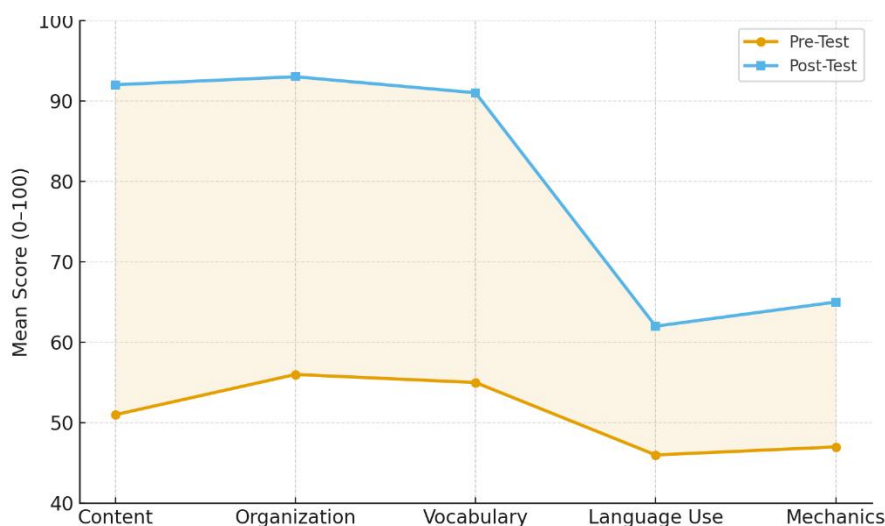


Figure 2. Improvement across Writing Aspects (Pre-Test vs. Post-Test)

Improvement across Writing Aspects

Students' writing performance improved substantially across all aspects. The overall mean increased from 51.0 (pre-test) to 88.6 (post-test), a gain of 37.6 points or 73.7%. The largest improvements appeared in *Content* (80.4%) and *Organization* (66.1%), followed by *Vocabulary* (65.5%), while *Language Use* (34.8%) and *Mechanics* (38.3%) showed smaller but consistent progress.

These results confirm that the GBA–Mentimeter model most strongly enhanced higher-level writing skills such as idea development and coherence, while grammatical and technical accuracy improved moderately. This pattern aligns with Sari & Yuliani (2022) and Emilia & Hamied (2023), who found that genre-based instruction primarily strengthens macro-structural skills before micro-level accuracy. In summary, the integration of structured genre scaffolding with interactive digital tools significantly improved students' writing competence, supporting both skill development and learner engagement in EFL contexts.

Discussion

Improvement in Students' Writing Performance

The present study revealed a statistically significant improvement in students' writing performance following the implementation of the Genre-Based Approach (GBA) integrated with Mentimeter. The paired-samples *t*-test showed a large and meaningful difference between the pre-test and post-test scores, $t(35) = 27.997$, $p < .001$, with a very large effect size ($d = 4.67$). This effect size notably exceeds that of similar GBA studies (typically $d = 1.0$ – 2.5 ; Sari, 2022; Rahmawati, 2023), indicating the strong impact of the combined pedagogical model.

The substantial gain in writing performance confirms that the integration of explicit genre scaffolding and interactive feedback effectively enhanced students' textual competence. The structured GBA stages—*Building Knowledge of the Field*, *Modeling of Text*, and *Joint Construction of Text*—helped learners internalize rhetorical organization, argument development, and cohesion in writing. Among these stages, the *Joint Construction* phase appeared most impactful, as collaborative drafting and shared modeling enabled students to reduce anxiety and improve coherence. Meanwhile, Mentimeter contributed affectively by increasing participation, engagement, and motivation through interactive feedback. This aligns with Hyland (2021) and Derewianka & Jones (2022), who argue that genre pedagogy facilitates explicit awareness of text purpose and structure, and with Novianti et al. (2022) and Putri & Dewi (2022), who highlight how digital interactivity supports confidence and collaborative learning.

Nevertheless, the relatively high post-test mean ($M = 92.54$) may also indicate a potential *ceiling effect*, as students approached the upper range of the rubric scale. Future studies with broader scoring criteria or multiple writing tasks could better capture long-term proficiency differentiation.

Aspect-Specific Gains in Writing

Analysis across the five writing aspects demonstrated substantial progress in *Content* (80.4%) and *Organization* (66.1%), followed by *Vocabulary* (65.5%), while *Language Use* (34.8%) and *Mechanics* (38.3%) showed smaller yet meaningful improvement. These findings suggest that the GBA–Mentimeter model was most effective in strengthening macro-level writing skills—idea generation, logical sequencing, and argument clarity—before influencing micro-level accuracy such as grammar and punctuation.

The smaller improvement in *Language Use* can be attributed to the limited duration of the intervention, as grammatical accuracy typically develops more slowly and requires sustained practice (Sari & Yuliani, 2022; Emilia & Hamied, 2023). Moreover, since the treatment emphasized genre awareness and content development, students may have prioritized meaning over form. These outcomes confirm previous findings by Hyland (2021), showing that genre pedagogy primarily enhances global structure and communicative intent.

The reliability coefficients across aspects ($\alpha = .84-.90$) confirmed the internal consistency of the rubric and indicated that the scoring procedure was dependable. Overall, these results demonstrate that the integration of GBA and Mentimeter effectively developed both structural and linguistic aspects of writing, supporting students' transition from assisted to independent composition.

Students' Perceptions toward GBA–Mentimeter Integration

Students' perceptions were overwhelmingly positive ($M = 4.22$, $SD = 0.41$, 88.4% agreement), reflecting strong acceptance of the GBA–Mentimeter combination as both pedagogically effective and enjoyable. The highest score was recorded in *Writing Process and Skill Development* ($M = 4.30$), followed by *Mentimeter as an Interactive Tool* ($M = 4.19^*$) and *GBA Understanding* ($M = 4.13^*$). Students reported that the explicit genre stages improved their understanding of text structure, while Mentimeter made lessons more interactive and confidence-building. Representative comments included:

“Mentimeter made writing sessions more enjoyable and helped me express ideas freely.”

“The stages of GBA helped me understand how to build arguments step by step.”

These reflections support the dual impact of the model: cognitively, it fostered awareness of textual organization; affectively, it increased engagement and self-efficacy. The results echo those of Yang (2024) and Hidayati & Utami (2023), who found that digital scaffolding in genre-based writing enhances participation and reduces writing anxiety.

While most students adapted quickly, a few initially struggled with using Mentimeter, suggesting a need for brief digital familiarization at the start of implementation. Importantly, the distinct contributions of both components were evident: GBA structured learning through explicit stages, whereas Mentimeter amplified motivation and participation through real-time feedback.

Pedagogical and Theoretical Implications

Pedagogically, this study reinforces the potential of integrating genre pedagogy with digital tools in EFL classrooms. The GBA framework provided a clear and replicable structure for teaching argumentative writing, while Mentimeter enriched interaction and sustained motivation. Teachers are encouraged to adopt similar combinations to enhance both cognitive and affective dimensions of learning. However, the approach requires adequate preparation, including teacher training in digital pedagogy and access to stable internet connectivity. In less-resourced contexts, adapting Mentimeter activities into offline collaborative tasks may offer a practical alternative.

Theoretically, the findings strengthen the *sociocultural foundation* of genre pedagogy (Vygotsky, 1978; Halliday, 1994), demonstrating that learning occurs through scaffolded social interaction within the Zone of Proximal Development (ZPD). The integration of Mentimeter extended this framework by enabling mediated peer interaction and collective feedback, allowing learners to co-construct meaning and refine language use collaboratively. This synergy between structured genre scaffolding and interactive technology represents a contemporary evolution of GBA in digital EFL contexts.

Critical Reflection, Limitations, and Future Directions

Although the results were robust, alternative explanations should be acknowledged. The large effect size may have been partly influenced by the *novelty effect* or *Hawthorne effect*, as students were exposed to an engaging new medium. Additionally, the short treatment duration (three sessions) and single-class sample limit generalizability. The very high post-test scores also suggest a possible ceiling effect, emphasizing the need for more sensitive rubrics in future studies.

Practically, the model's scalability in larger classes and resource-limited schools requires further testing. Implementing both GBA and Mentimeter simultaneously may challenge teachers unfamiliar with technology-mediated instruction. Future studies should explore long-term retention of writing gains and whether improvements remain stable once the novelty of digital tools diminishes.

Despite these limitations, the findings provide strong empirical support for integrating explicit genre pedagogy with interactive digital platforms in EFL writing instruction. This combination effectively enhances students' textual

competence, motivation, and confidence, demonstrating a sustainable pathway for bridging theory and classroom practice.

Conclusion

This study demonstrated that integrating the Genre-Based Approach (GBA) with Mentimeter effectively enhances students' argumentative writing performance in EFL contexts. The intervention not only improved learners' writing quality across content, organization, vocabulary, language use, and mechanics but also fostered high levels of motivation and engagement. The combination of explicit genre scaffolding and interactive digital feedback represents a productive synergy between structured pedagogy and technology-mediated learning.

The unique contribution of this study lies in its empirical evidence that *digitalized genre pedagogy* where GBA stages are supported by interactive platforms like Mentimeter can simultaneously strengthen both cognitive and affective dimensions of writing development. This research also extends the theoretical framework of GBA by situating it within a sociocultural and technology-integrated learning environment, demonstrating how online scaffolding can enhance learners' participation within the Zone of Proximal Development.

Despite these strengths, several limitations must be acknowledged. First, the study involved a single class from one school, which restricts the generalizability of findings. Second, the three-week treatment period was relatively short, limiting observations of long-term retention. Third, the focus was confined to argumentative writing, excluding other genres that might respond differently to this instructional model.

Future studies should therefore adopt experimental or longitudinal designs across multiple schools to examine the sustainability of the observed improvements. Extending the treatment duration to six to eight weeks may yield deeper insights into language accuracy and transfer of genre knowledge. Researchers are also encouraged to apply GBA–Mentimeter integration to other genres such as descriptive or narrative writing and to explore mixed-method designs for capturing qualitative changes in writing development.

Pedagogically, teachers can adopt this integrated model to create interactive, scaffolded, and learner-centered writing instruction. The use of Mentimeter or similar tools allows teachers to collect immediate feedback, promote participation, and facilitate peer learning during genre stages. At the policy level, curriculum developers are encouraged to incorporate digital-supported genre pedagogy into EFL writing programs, aligning instructional design with current trends in educational technology and the Merdeka Curriculum's emphasis on active learning and collaboration.

In summary, this study provides strong evidence that combining explicit genre instruction with digital interactivity offers a sustainable and scalable strategy for improving EFL students' writing competence. The model bridges the gap between theory and classroom practice by showing that effective writing development can emerge through the synergy of structured guidance, social collaboration, and technological engagement.

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