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INTEGRATING DEEP LEARNING IN CORRECTIVE FEEDBACK THROUGH DIGITAL COMICS TO INCREASE STUDENTS' WRITING SKILLS

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ABSTRACT
Writing is one of the most challenging skills for English as a Foreign Language (EFL) students, particularly in generating ideas, organizing paragraphs, and using accurate grammar and vocabulary. Effective corrective feedback is needed to help students improve their writing through meaningful revision. This study investigates the effectiveness of integrating deep learning into corrective feedback through digital comics to improve English as a Foreign Language (EFL) students' writing skills. The objective of the research is to investigate whether corrective feedback designed to promote deep learning enhances students' writing ability. In this study, deep learning is conceptualized as an active learning process in which students actively engage in understanding errors, reflecting on feedback, and revising their writing meaningfully. A quasi-experimental design was applied in this study. The subjects were tenth grade EFL students at Senior High School in Bireuen, Aceh. The students were assigned to an experimental group and a control group. Data were gathered using pre-test and post-test writing tests. Students' writing skills were assessed in terms of content, organization, language use, vocabulary, and mechanics. The data were analyzed using descriptive statistics, effect size analysis, and normalized gain analysis. The findings indicated that students in the experimental group showed significant improvement in writing skills, with the average score from 58.0 on the pre-test to 78.4 on the post-test. The analysis indicated a large effect size with a Cohen's d value of 2.05 and a moderate normalized gain score of 0.486. Improvement was found across all writing components, indicating deeper revision practices. This study contributes to EFL writing pedagogy by demonstrating how digital comics based corrective feedback can promote deeper reflection, meaningful revision, and improved writing instruction.
Keywords: *Corrective Feedback, Deep Learning, Digital Comics, Writing*

INTRODUCTION

Developing students' writing skills remains a persistent challenge in EFL instruction. Writing requires students to generate ideas (Misnawati & As'ari, 2023), organize thoughts coherently, and apply appropriate grammatical and vocabulary, which often leads to difficulties for EFL students (Pham & Truong, 2021). Writing also functions as a medium for expressing and organizing ideas meaningfully (Yassin & Sood, 2024). Although many students understand grammatical rules, they frequently struggle to apply them effectively in extended written texts, resulting in surface level accuracy with limited ideas development, particularly in descriptive text writing (Cahyaningrum, 2022). Sun et al., (2024) writing is therefore considered a cognitively demanding skill for EFL students.

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One crucial factor influencing students' writing development is the effectiveness of corrective feedback provided during the writing process. Corrective feedback is essential in enabling learners to identify errors and improve writing accuracy (Nguyen & Chu, 2024). Feedback is more concerned with its formative function, namely providing comments to support students' improvement, rather than its summative function of assigning grades. This is especially important in EFL writing because writing involves a process of continouos revision. However, in many EFL classrooms, feedback is still often provided without sufficient explanation or student involvement (Xiaomeng & Ravindran, 2024).

Recent educational discourse has emphasized the importance of deep learning as key principle in effective teaching and learning (Bal & Öztürk, 2025). Deep learning refers to an approach that encourages students to motivate and actively with learning materials, reflect on their understanding, and apply knowledge meaningfully rather than memorizing information superficially (Nadia et al., 2025).

Concurrent with this educational transformation, the integration of digital media has gained increasing attention in language education. Digital comics integrate visual and textual modalities, creating an interactive learning medium that enhances students' engagment and imotivation in developing writing skill (Mu'awiah et al., 2025). Digital comics platform allows feedback to be presented in a contextualized and visually meaningful format, which can enhance students' comprehension and motivation (Mayer & Fiorella, 2021). Previous studies have suggested that integrating corrective feedback with visual media can increase students' engagement and support more effective processes (Maqbali & Mohin, 2022). However, although digital tools in writing instruction are not new, studies integrating corrective feedback through digital comics that explicitly promote deep learning remain underexplored in EFL writing research (Tekin & İlhan, 2025).

Consequently, this study explores the application of deep learning into corrective feedback through Pixton digital comics in improving EFL students' descriptive writing skills. Specifically, this study is designed to answer the following research Questions: (1) To what extent does the integration of deep learning into corrective feedback through digital comics to enhance EFL students' writing skills? (2) How effective are deep learning based digital comics as a

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medium into corrective feedback in writing skill? (3) What are students' perception toward the use of digital comics in corrective feedback during writing skills?

MATERIALS AND METHOD

Materials

Writing Skills

Writing serves as a tool for expressing thoughts and feelings, making it essential for both academic and personal communication (Hukom & Huninhatu, 2023). In the EFL context, writing is recognized as one of the most difficult aspects of language learning to master due to integrate vocabulary, spelling, grammar, organization and content (Zuraini et all., 2021). Writing is an essential language skill of interpersonal communication that utilizes mental cognitive processing system to generate, express ideas into written form, enabling readers to comprehend of the content of the text (Sahmadan & Hasan, 2023).

Writing is a multidimensional process that enables writers to develop and reflect on ideas, in which corrective feedback facilitates students' ability to recognize and improve weaknesses in their writing (Moulidia, 2022). Klimova and Pikhart (2022) argue that corrective feedback more effective using technologies or digital corrective feedback in writing skills.

Digital technology that mostly use both the teachers and students to acquire new vocabulary or language from digital platform (Albion, 2021). Teachers nowadays in modern and digital era are required to design learning media as innovation by utilizing online media (Kurnia Octaviani & Hendro, 2023). Effective corrective feedback from teachers has been shown to significantly improve students' writing skill. Writing is a purposeful tool that can be used to achieve a wide range of objectives. It enables individuals to communicate ideas effectively across both distance and time (Meng, 2024). It can foster a shared sense of heritage and purpose among larger groups of people (Harlena, 2020).

Concept of Descriptive Genre

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Descriptive text is a paragraph consisting a group of sentences that are closely related in meaning and focus on single idea. It is commonly used to describe how a person, place and things is looks like (Parico & Layco, 2020). Descriptive text is a type of text that describes something by appealing directly to the sense (Caron & Markusen, 2023). Therefore, students can create clear descriptive writing by using their senses, helping readers visualize the described object (Megawati, 2020).

Descriptive text has generic structure, namely identification and description (Marue & Pantas, 2019). Identification refers to the process of recognizing the phenomenon to be described (Wahyuni; Irma, 2019). Supiatman et all., (2024) states that descriptive text is identifies and provides information about person, object, or animal by describing the ideas, characteristics, types, forms, and specific features in detail so that the readers can clearly understand what will be explained. Meanwhile, description refers to the part that describes the qualities, characteristics, and the appearance of the object being described (Sugiharti et all., 2020). Sabat and Aisyah (2022) argued that writing descriptive texts can allow students to express feelings according to what is observed or seen.

Corrective Feedback in EFL Writing

Corrective feedback has long been recognized as an essential component of EFL writing instruction, as it offers students clear guidance to identify errors and improve writing accuracy (Batubara et al., 2023). Corrective feedback strategies can be designed in different ways, such as; 1) teachers can focus on types of Written Corrective Feedback (WFC) in giving direct feedback, commenting, reformatting. 2) teachers can provide primarily focus on correcting grammar, organization or content issues. 3) teachers can design corrective feedback through online application (Nhi, 2022).

According to Barnes (2024) feedback is a constructive evaluation of a text, intended to provide students with guidance that fosters the ongoing development of their writing process. As explained by Barnes (2024) corrective feedback can be given orally and writing. Oral feedback occur when the teacher promptly corrects students' errors during class (Ellis, 2009; Masrul et al., 2024). While, written corrective feedback is defined as written guidance that teachers provide to students whether in classroom or in independent learning contexts (Harthy et al., 2024).

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Based on Kim et al (2021) spend a lot time to provide corrective feedback by responding some mistake of students writing assignment, teachers may be expecting that their students have deeply engaged with the feedback.

Duong & Nguyen (2022) add corrective feedback is a teachers' input to a writer's composition in the form of information to be used for revision. By offering consistent feedback, teachers facilitate student self-evaluation and promote the continuous development of teaching and learning (Khodadadi, 2021). This is the most appropriate time for teachers to offer corrective feedback and allow students the chance to revise any errors in their writing. Duong and Nguyen (2022) explained that there is quietly strong correlation between corrective feedback and students' progress in learning writing and successful teaching of writing for teachers. In addition, teachers of English are aware of which language aspects are most relevant to their students' learning needs (Alqurashi, 2022).

Deep Learning into Feedback

In education, deep learning is an approach that emphasizes deep conceptual understanding, reflective information processing, reflection, and the ability to connect new knowledge with prior experience or information (Fullan et al., 2018). In writing instruction, this approach encourages students not only passively accept corrections but also actively reflect on their mistakes, understand the reasons for them, and correct them through critical and analytical thinking (Pratama & Hastuti, 2024).

According to McTighe (2020) explains that deep learning takes place when students immerse themnselves in learning, connecting new ideas to prior knowledge, and striving to fully understand the meaning of the material. In this context, corrective feedback strategies delivered through digital comics have the potential to strengthen in-depth learning processes, as students are encouraged to reflect on mistakes contextually through engaging and meaningful visual narratives (Octaberlina, 2023).

Digital comics support deep learning by integrating text and images, enabling richer information processing and improving student retention and comprehension (Lee, 2019). When corrective feedback is packaged in a visual narrative, students not only understand "what" went wrong, but also "why" and "how" to fix it, which

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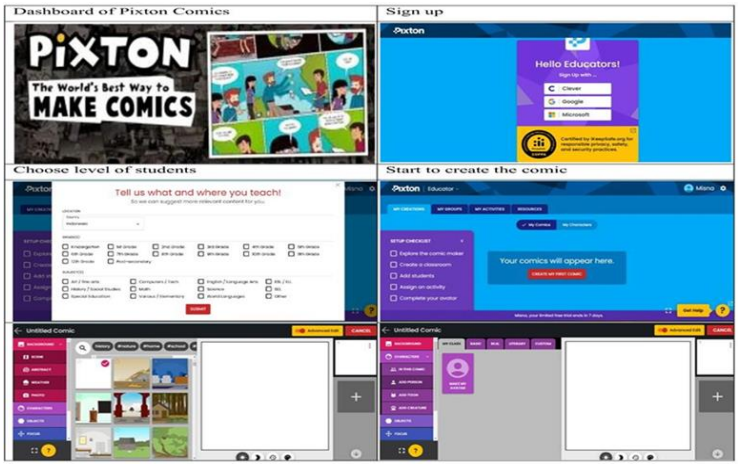
is the essence of deep learning (Nhi, 2022). Deep learning approach is an appropriate theoretical framework to explain how students can develop their writing skills through reflective, directed; learning experiences supported by effective digital media (Bal & Öztürk, 2025).

Digital Comics in Writing Instruction

Digital comics are multimodal learning media incorporating visuals, written content, and narrative elements to enhance comprehending and learner involvement (Thahir & Latifa, 2025). Using digital comics as a learning tool has been proven to elevate students' motivation and facilitate understanding of abstract language concepts (Mayer & Fiorella, 2021). Platform such as Pixton enable teachers to present instructional content and feedback visually, making learning more contextualized and accessible for students (Orellana & Mayorga, 2021). Pixton is an interesting comic creation that can use for teacher and students on writing sentences during the process of teaching and learning (Lestari et al., 2023). In this study, digital comics were used as a medium to deliver corrective feedback in an engaging and meaningful manner, allowing students to better interpret feedback and revise their writing effectively.

Figure 1

Illustrates steps of using Pixton digital comics



The figure 1 illustrates the steps of using Pixton comics, beginning sign up through google, accessing the dashboard, selecting the grade and subject, and starting to create the comic.

Figure 2

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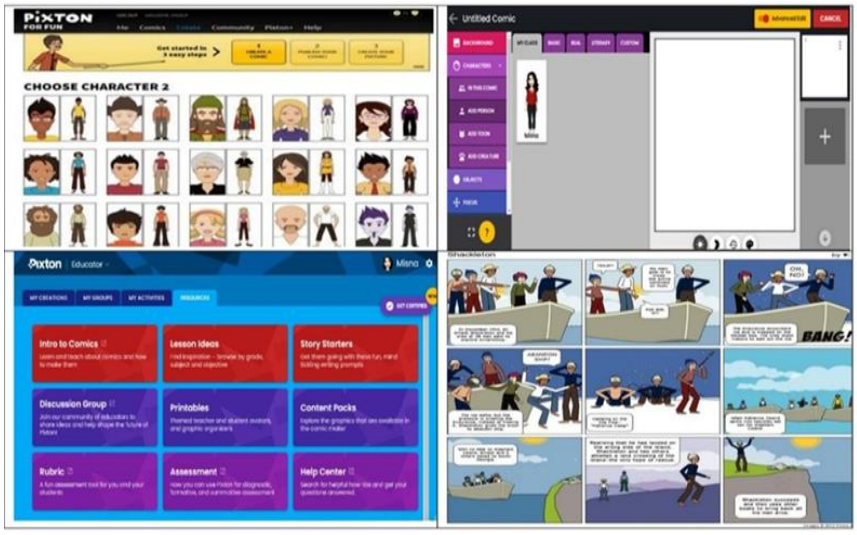
Pixton's features for creating comics



The figure 2 illustrates Pixton interface, a digital platform for creating comics that allows users to select characters, customize appearances and backgrounds, and arrange scenes to compose short descriptive paragraphs.

Integrating Deep Learning into Corrective Feedback through Digital Comics

Integrating deep learning into corrective feedback through digital comics in this study was designed to enhance students' ability to write descriptive text by transforming feedback into meaningful learning process (McTighe, 2020; Yu & Wang, 2025). The integration emphasized students' active involvement in understanding their writing errors, reflecting on feedback, and revising their paragraph purposefully (Pitukwong & Saraiwang, 2024). Deep learning in this context does not refer to artificial intelligence but to a pedagogical approach that encourages cognitive engagement, reflection, and knowledge construction during the writing process (Fullan et al., 2018).

The corrective feedback focused specifically on students' descriptive text writing drafts, in which the teacher analyzed common errors related content development, unclear identification, limited description, organization, grammar, and vocabulary. The teacher designed digital comic panels that illustrated typical writing problems and their possible revisions (Lusiana & Nuryanto, 2025). The comics presented feedback in the form of short dialogues, visual cues, and contextualized examples, enabling students to interpret feedback more clearly and meaningfully (Tekin & İlhan, 2025).

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Deep learning principles in this study emphasized active cognitive engagement, reflective learning, metacognitive awareness, and meaningful knowledge construction (Henríquez, 2025). Cognitive engagement was reflected in students' active participation in analyzing corrective feedback and revising their writing. Metacognitive awareness appeared when students identified writing errors, reflected on feedback, and monitored their revision progress. Meanwhile, meaningful kowledge construction occurred as students connected corrective feedback and visual contexts from digital comics to improve the organization, content, and accuray of their writing. Students were required to identify writing errors presented in digital comics, explain the underlying causes, and apply the feedback to revise their own paragraph, thereby shifting their role from passive recipients of correction to active students (Ulviani, 2025). Through these activities, students became more aware of their writing weakness, monitored their progess, and constructed meaningful understanding by connecting corrective feedback with the visual context provided in the digital comics.

Furthermore, the use of digital comics increased students' motivation and attention during the feedback process (Sahin & Erol, 2022). The visual and narrative elements of comics supported students' comprehension of language features commonly used in descriptive text, such as adjective clauses and specific noun (Yu & Wang, 2025). Through repeated cycles of feedback, reflection, and revision, the integration of deep learning into corrective feedback through digital comics was expected to promote sustained improvement in students' descriptive text writing skills (Chomah, Isti; Irawati, 2024).

The novelty of this study is the integration of deep learning principles into corrective feedback through digital comics in EFL writing instruction. Unlike previous studies that focused separately on digital comics or corrective feedback, this study combines corrective feedback, meaningful revision, and visual learning activities to promote meaningful, mindful, and joyful learning in students' writing development.

Method

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This study employs a quantitative approach with a quasi-experimental design (Creswell, 2023). The study was conducted at SMA Negeri 1 Kuala Bireuen, Aceh, Indonesia. This research used a quasi-experimental design because the researcher did not perform full randomization since the classes (X-D and X-F) had already been naturally formed within the school setting. This design was considered appropriate to measure the effectiveness of integrating deep learning into corrective feedback through digital comics on students' writing skills by comparing the experimental and control groups. The experimental group received the treatment through deep learning into corrective feedback through digital comics, meanwhile the control group was taught using conventional writing instruction. The pre-test was administrated in the first meeting to assess students' initial writing ability before the treatment, while the post-test was conducted in the last meeting to measure their progress after the treatment. Data analysis was conducted using the Statistical Package for Social Science (SPSS) version 27.0.1.0. Initially, descriptive statistics were applied to summarize the data, including mean scores, standard deviations, and score ranges, were calculated the distribution of each variable (Karamurugan & Govindarajan, 2022).

To answer and analyze the first question, an analytic writing rubric by Heaton was employed to assess students' writing performance (Mastura et al., 2020). Descriptive statistics were used to summarize students' writing scores, and a paired sample t-test was conducted to determine whether students' writing scores significantly improved from pre-test to post-test (Samosir & Napitupulu, 2026). In addition, effect size analysis using Cohen's d and normalized gain score were applied to determine the level and degree of students' improvement. While, in response to the second question, the researcher used an independent sample t-test and ANCOVA to compare post-test scores between the experimental and control groups. ANCOVA was specifically used to control the students' pre-test scores as a covariate in order to reduce the influence of initial diffrences between groups and to obtain a more accurate measure of the treatment effect in determining the effectiveness of integrating deep learning into corrective feedback through digital comics.

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To answer the third question, data were obtained from a perception questionnaire distributed to the experimental group after the post-test. The students' responses were analyzed using descriptive statistics, including mean score, frequency, and percentage to provide clear picture of how students' perceptions toward the integration of digital comics in corrective feedback during students' writing competence. In addition, Cronbach's Alpha was computed to examine the internal consistency of the questionnaire items, with a coefficient value of 0.70 or higher indicating acceptable reliability.

RESULTS

The findings of the study, conducted at SMA *Negeri 1 Kuala, Bireuen* investigated the effectiveness of integrating deep learning into corrective feedback through digital comics in enhancing EFL students' writing skills. The results are organized into two main parts: 1) quantitative analyses comparing pre-test and post-test of the experimental and control groups, 2) students' perceptions toward the use of digital comics in the writing feedback process. The data were analyzed using descriptive and inferential statistical method, including mean score, standard deviation, paired sample t-tests, normalized gain (N-Gain), and effect size (Cohen's *d*).

Results of Students' Test

To what extent does the integration of deep learning into corrective feedback through digital comics to enhance EFL students' writing skill?

The experimental group consisted of 32 students who received writing instruction integrated with deep learning into corrective feedback using digital comics. The score of pre-tests was 1887, with the average score was 58,97 and standard deviation was 7,22, indicating moderate variation in initial writing ability. After the treatment, the post-test score was 2593, with a mean score was 81,03 and standard deviation was 7,33. The similar SD values indicate that although all students experienced significant improvement, the overall distribution of score remained relatively uniform. The results reflect consistent and substantial improvements in writing skill of digital comic-based feedback.

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Meanwhile, the control group consisted of 30 students taught using conventional corrective feedback techniques. The pre-test score was 1705, with a mean score of 56,83 and SD was 3,49. Indicating relatively homogeneous writing ability. Meanwhile, the score of post-tests was 1981, with a mean score was 66,03 and SD= 8,61, showing a wider variation in performance. While some progress occurred, the overall improvement was smaller and less evenly distributed than in the experimental group.

Paired Sample t-test

The determine whether the differences between pre-test and post-test means were statistically significant, a paired sample t-test was conducted for both groups.

Group	N	Mean Difference (***D***)	SD	t-value	t-table (p=0.05)	Interpretation
Experimental	32	22,06	4,98	25,07	2,040	Significant
Control	30	9,20	4,10	12,27	2,045	Significant

Based on the table shows that the experimental group's *t*-value was 25.07 exceeded the critical value (2.040), confirming that the increase in the post-test score was statistically significant. Meanwhile, the control group was obtained a *t*-value was 12,27 and critical value was 2,045, but the mean score difference was 9,20, that was much lower, indicating that the use of deep learning through digital comics produced a stronger impact on writing performance.

N-Gain Analysis

Normalized gain (N-Gain) was calculated to evaluate the relative effectiveness of the two teaching methods.

Group	N-Gain	Category
Experimental	0.54	Medium
Control	0.21	Low

The experimental group N-Gain was score 0,45 in the medium category; these results indicate that the integration of deep learning into corrective feedback

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through digital comics contributed to significant improvements in students' writing skills. In contrast, the control group H-Gain score was 0,21 or in the low category, indicating limited progress from conventional instruction.

Effect Size (Cohen's d)

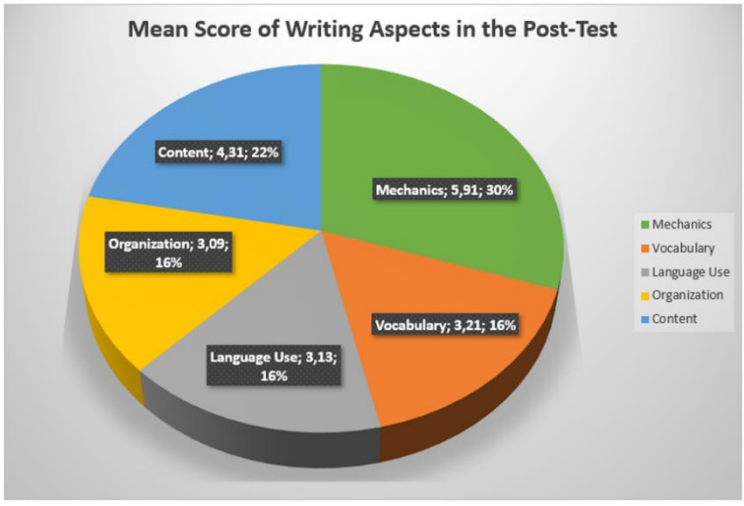
This following table is a measure of the treatment effect; Cohen's *d* values were calculated for both groups.

Group	Cohen's *d*
Experimental	3.03
Control	1.40

Based on the table above, the experimental group (Cohen's d= 3,03). In contrast, the control group (Cohen's d =1,40). Therefore, the experimental group showed a very large effect size, indicating a strong and meaningful improvement in writing skill after the used of Pixton digital comics.

How effective are deep learning based digital comics as a medium into corrective feedback in writing skill?

The analysis of writing aspects shows that deep learning through digital comics is highly effective as a medium for providing corrective feedback in teaching writing, can be seen in the following pie chart:



The pie chart shows the mean score of writing aspects in the post-test, showing that mechanics achieved the highest improvement (5,91), followed by content (4,31). Vocabulary improved by (3,21), language use increased by (3,13),

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and organization showed a mean score was 3,09, it indicates progress in each writing aspect after the treatment.

What are students' perception toward the use of digital comics in corrective feedback during writing skills?

Reliability Analysis

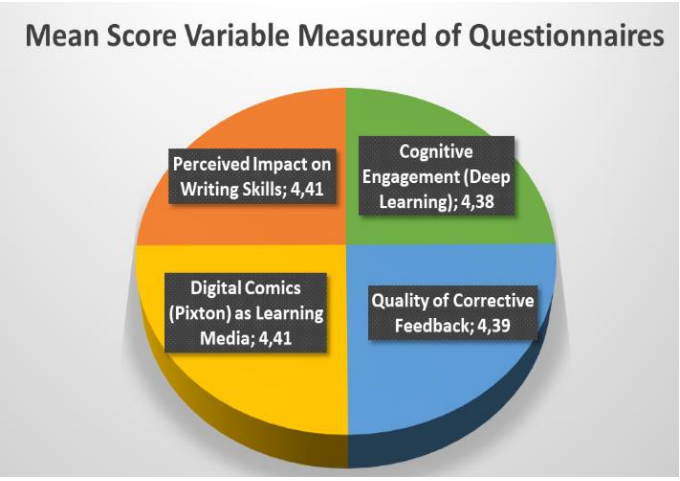
Students' perceptions were assessed consisted of 20 items on five-point Likert scale. The instrument demonstrated excellent reliability with Cronbach's Alpha was 0,972.

Cronbach's Alpha = 0.972

Results of Students' Perception

Descriptive statistical analysis showed that the total perception score was 2,814 out of a possible 3,200, resulting in an average score of 87,93 (4,39) on the Likert scale, which it in the very positive category. This indicates that students highly favorable perceptions toward the integration of deep learning into corrective feedback through digital comics.

The questionnaires data were further analyzed into four main constructs: Cognitive Engagement, Quality of Corrective Feedback, Digital Comics as Learning Media, and Perceived Impact on Writing Skills.



Based on the pie chart above, shows the results revealed that students' perceptions were consistently high across all for constructs. **Cognitive Engagement** was 4,38, indicated that students actively reflected on their writing errors and revised their work meaningfully. **Quality of Corrective Feedback** was

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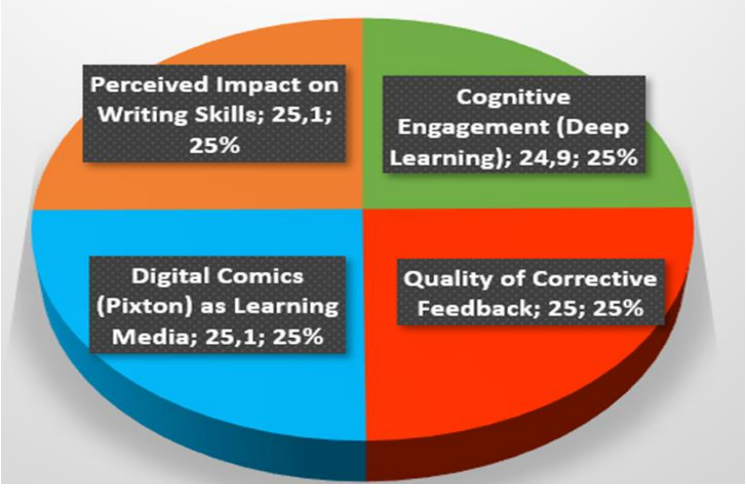
4,39 suggested that the feedback provided through digital comics was perceived as clear, specific, and helpful. **Digital Comics as Learning Media** was 4,41, construct demonstrated that students found the visual format effective and engaging in understanding feedback. Similarly, **Perceived Impact on Writing Skills** was 4,41 shows that students believed this approach significantly improved their writing skill.

The analysis of the proportion of each construct shows an almost equal distribution of students' perception across the four dimensions. The data is presented in a pie chart.



Based on the pie chart above, shows that Cognitive Engagement was 24,9%, Quality of Corrective Feedback was 25,0%, Digital Comics as Learning Media was 25,1%, and Perceived Impact on Writing Skills was 25,1%. It indicates that the integration of deep learning into corrective feedback through digital comics was positive in all aspects, effectively supporting engagement, feedback clarity, media usefulness, and writing improvement.

DISCUSSION

The results of this study, conducted at SMA *Negeri 1 Kuala, Bireuen* show that integrating deep learning into corrective feedback through digital comics significantly enhanced students' writing skills. The experimental group got the mean score increased from 58,97 in the pre-test to 81,03 in the post-test. While, the control group improved from 56,83 in the pre-test to 66,03 in the post-test.

The mean difference was 22,06 and t-value was 25,07 ($p < 0.05$) confirm that the improvement was significant. The N-Gain score was 0,54 in medium

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category (0.30 ≤ N-Gain < 0.70 = Medium Category), indicates meaningful progress, and effect size (Cohen's *d*= 3,03) shows that the intervention produced a very large and substantial effect on writing performance.

The validity of these results is strengthened by the consistent improvement across aspects of writing; mechanics (5,91), content (4,31), vocabulary (3,21), language use (3,13), and organization (3,09). These findings indicate that students not only improved surface level accuracy but also developed higher order writing skills through reflective revison and active engagement during the writing process.

These findings support the theory proposed by Fullan et al., (2018), who state that deep learning emphasizes cognitive engagement, reflection, and meaningfull knowledge construction. In this study, students actively analyzed corrective feedback, reflected on their writing weakness, and revised their descriptive texts purposefully. The findings also support McTighe (2020), who explain that deep learning occurs when students connect new understanding with prior knowledge and engage meaningfully in learning activities.

Furthermore, the use of digital comics as visual learning media contributed significantly to students' engagement and motivation during writing activities. This finding is consistent with Ajabshir (2024), who argue thst multimodal learning media integrating visuals and text can improve students' motivation. Similarly, Orellana & Mayorga, (2021) state that digital comic platforms provide contextualized and accessible learning experiences that support meaningful learning. The visual narratives presented through Pixton digital comics helped students better understand corrective feedback and revise their writing more effectively.

The findigs of this study are also in line with previous empirical studies which reported that digital comics and technology-based corrective feedback positively affect students' writing achievement, engagement, and motivation in EFL classrooms (Tekin & İlhan, 2025). Previous studies suggested that visual learning media support students in organizing ideas, maintaining atttention, and participating actively during writing instruction. Similarly, the present study revealed that students became more reflective and actively involved in revising their writing through digital comic-based corrective feedback.

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In addition, the perception questionnaire results supported the effectiveness of this approach. Cognitive Engagement (4,38). Quality of Corrective Feedback (4,39). Digital Comics as Learning Media (4,41). And, Perceived Impact on Writing Skills (4,41). The balanced construct distribution Cognitive Engagement was 24,9%, Quality of Corrective Feedback was 25,0%, Digital Comics as Learning Media was 25,1%, and Perceived Impact on Writing Skills was 25,1%. It indicates that deep learning into corrective feedback through digital comics gave positive outcomes across all dimensions, effectively enhancing student engagement, feedback comprehensibility, media effectiveness, and overall writing development.

These findings also reflect the successful integration of deep learning into corrective feedback through digital comics during writing activities. Meaningful learning was demonstrated through students' meaningful revision and improvement acrross all writing aspects. Mindful learning appeared when students reflected on corrective feedback and became aware of their writing errors during the revision process. Meanwhile, joyful learning was created through the use of digital comics, which provided engaging and enjoyable writing activities. The findings indicate that digital comic-based corrective feedback successfully integrated meaningful, mindful, and joyful learning during writing activities.

Overall, the discussion confirms that integrating deep learning into corrective feedback through digital comics improved students' descriptive writing skills across mechanics, content, vocabulary, language use, and organization through reflective revisionactivities, active engagement with corrective feedback, and visually engaging digital comic-based learning experiences.

CONCLUSION

The findings of this research indicate that the integration of deep learning into corrective feedback through digital comics significantly enhanced EFL students' decriptive writing skill. The experimental group showed substantial improvement from the pre-test to the post-test, with an N-Gain score of 0.54, indicating meaningful progress in students' writing development, and a very large effect size (Cohen's d=3.03), demonstrating a strong impact of the treatment on students' writing performance. Improvements were consistently found across all writing aspects, including mechanics, content, vocabulary, language use, and

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organization. In addition, students expressed very positive perceptions toward the use of digital comics, indicating that this approach succesfully promoted engagement, clarity of feedback, reflective revision, and motivation during writing activities

These findings suggest that integrating deep learning into corrective feedback through digital comics provides an effective and innovative model for descriptive writing instruction throgh reflective and technology enhaced feedback. However, this study was limited to descriptive text writing and involved a relatively small number of investigate the implementation of this approach in different educational levels, larger populations, and other writing genres to further examine its effectiveness levels, larger populations, and other writing genres to further examine its effectiveness and long-term impact on EFL writing development.

REFERENCES

Ajabshir, Z. F. (2024). Empowering EFL writing through digital storytelling: A quasi-experimental assessment of CALF measures and multidimensional engagement. *Acta Psychologica*, *250*(July), 104564. https://doi.org/10.1016/j.actpsy.2024.104564

Albion, P. (2021). Learning with digital technologies. *Teaching and Digital Technologies*, 229–239. https://doi.org/10.1017/cbo9781316091968.023

Alqurashi, F. (2022). Exploring L2 written corrective feedback in the Saudi context: a critical review. *World Journal of English Language*, *12*(7), 284–293. https://doi.org/10.5430/wjel.v12n7p284

Bal, M., & Öztürk, E. (2025). The potential of deep learning in improving K-12 students' writing skills: A systematic review. *British Educational Research Journal*, *December 2024*, 1–18. https://doi.org/10.1002/berj.4120

Barnes, A. J. (2024). A google sheets-based approach to dynamic written corrective feedback : Learning outcomes and teacher time. *CALL*, 7–14. https://doi.org/https://doi.org/10.29140/9780648184485-02

Batubara, P. F., Mefia, W. A., & Pratama, A. R. A. (2023). The role of feeedback in improving writing skill. *Jurnal Multidisiplin Dehasen (MUDE)*, *2*(3), 531–534. https://doi.org/10.37676/mude.v2i3.4395

Cahyaningrum, N. (2022). *The strategies of teaching writing descriptive text at eighth grade of MTSN 1 Purbalingga*. Universitas Profesor Kiai haji saifudiin Zuhra Purwokerto.

Caron, J., & Markusen, J. R. (2023). *An analysis of students' vocabulary mastery on content words in writing descriptive text at the first grade of SMAN 7 Bandar Lampung.* Bandar Lampung.

Chomah, Isti; Irawati, T. (2024). The effectiveness of using pixton.com in writing storyboard of junior high school. *JEELL (Journal of English Education, Language and Literature)*, *11*(1). https://doi.org/https://doi.org/10.32682/3p48bm46

Creswell, & C. (2023). Research Design, Qualitative, Quantitative and Mixed

Copyright ©2026, ISSN: 2252-7818 E-ISSN: 2502-3543

Methods Approaches. In *SAGE Publications,Inc.: Vol. Sixth Edit* (Six editio, Issue 1). Sage Publications. https://medium.com/@arifwicaksanaa/pengertian-use-case-a7e576e1b6bf

Duong, T. M., & Nguyen, T. N. (2022). Providing written corrective feedback in ielts writing task 2: efl teachers' practices. *Kasetsart Journal of Social Sciences*, *43*(1), 251–256. https://doi.org/10.34044/j.kjss.2022.43.1.34

Ellis, R. (2009). Corrective feedback and teacher development. *L2 Journal*, *1*(1), 2–18. https://doi.org/10.5070/l2.v1i1.9054

Fullan, M., Quinn, J., & McEachen, J. (2018). Deep learning: Engage the world change the world. In D. A. Bartlett & M. Birdsall (Eds.), *Deep learning: Engage the world change the world.* SAGE Publications.

Harlena, D. (2020). Collaborative Writing Strategy for Teaching Writing Descriptive Text. *7th International Conference on English Language and Teaching (ICOELT 2019)*, *411*(Icoelt 2019), 276–279. https://www.atlantis-press.com/article/125935815.pdf

Harthy, S. R. Al, Darwish, A. S., Yacoub, M. A., & Alnwairan, M. A. (2024). Written corrective feedback and EFL students' use of prepositions, articles, punctuation and capitalization. *International Journal of Arabic-English Studies*, *24*(2), 415–436. https://doi.org/10.33806/ijaes.v24i2.526

Henríquez, et all. (2025). Social Sciences & Humanities Open Applying Kolb ' s experiential learning cycle for deep learning : A systematic literature review Ver o. *Social Sciences & Humanities Open Journal*, *12*(August). https://doi.org/10.1016/j.ssaho.2025.102096

Hukom, S. J., & Huninhatu, F. B. (2023). The use of lecturer's written feedback in writing class. *MATAI: International Journal of Language Education*, *4*(1), 100–114. https://doi.org/10.30598/matail.v4i1.11650

Karamurugan, S., & Govindarajan, B. (2022). *Statistical Package for the Social Science*. *4*(2), 616–618.

Khodadadi, S. (2021). The effect of direct and indirect written corrective feedback on Iranian EFL learners' grammatical accuracy in sentence completion exercises. *Journal of Language and Linguistic Studies*, *17*(1), 315–326. https://doi.org/10.17263/jlls.903423

Kim, Y. 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*(October 2020), 100408. https://doi.org/10.1016/j.edurev.2021.100408

Klimova, B., & Pikhart, M. (2022). Application of corrective feedback using emerging technologies among L2 university students emerging technologies among L2 university. *Cogent Education*, *9*(1). https://doi.org/10.1080/2331186X.2022.2132681

Kurnia Octaviani, S., & Hendro, W. (2023). Google review as digital teaching media for english writing skill. *Print) Journal of English Language and Education*, *8*(2), 2502–4132. https://doi.org/https://doi.org/10.31004/jele.v6i2.xxx

Lee, Y. J. (2019). Integrating multimodal technologies with VARK strategies for learning and teaching EFL presentation: An investigation into learners' achievements and perceptions of the learning process. *Australian Journal of*

Copyright ©2026, ISSN: 2252-7818 E-ISSN: 2502-3543

Applied Linguistics, *2*(1), 17–31. https://doi.org/10.29140/ajal.v2n1.118

Lestari, T. E., Titaley, A. G., Kurniawati, W., & Ridwan, A. (2023). *Utilization of digital media in making comics as an effort to improve writing competence*. 1418–1423. https://doi.org/10.2991/978-2-38476-008-4_153

Lusiana, M., & Nuryanto, S. (2025). *Digital Comic Media to Improve Learning Outcomes in Understanding Narrative Texts for Grade IV Students*. *9*(2), 381–389.

Maqbali, A. M. K. Al, & Mohin, M. (2022). Technology-mediated written corrective feedback: EFL teachers'beliefs and thier practices. *IJASOS-International E …*, *VIII*(22), 91–106. http://ijasos.ocerintjournals.org/en/pub/ijasos/issue/69512/1112443%0Ahttp://ijasos.ocerintjournals.org/en/download/article-file/2410724

Marue, M. G., & Pantas, M. B. (2019). Challenges in descriptive essay writing : A case of indonesian EFL leaners. *International Journal of Innovation, Creativity and Change*, *8*(12), 88–103. https://www.ijicc.net/images/vol8iss12/81205_Marue_2019_E1_R.pdf

Masrul, Erliana, S., Rasyidah, U., & Wicaksono, B. H. (2024). The effect of direct and indirect written corrective feedback on accuracy and fluency of university students' english writing. *World Journal of English Language*, *14*(2), 388–399. https://doi.org/10.5430/wjel.v14n2p388

Mastura, D. M., Arsyad, S., & Koto, I. (2020). the Effect of Genre Based Approach on Students' Writing Ability of Recount Text. *JOALL (Journal of Applied Linguistics & Literature)*, *5*(1), 88–93. https://doi.org/10.33369/joall.v5i1.9403

Mayer, R. E., & Fiorella, L. (2021). Introduction to multimedia learning. In *The Cambridge Handbook of Multimedia Learning* (Issue February 2022). https://doi.org/10.1017/9781108894333

McTighe, S. (2020). *Teaching for deeper learning: Tools to engage students in meaning making*.

Megawati, N. (2020). Using Guided Writing Strategy Strategy in Teaching Descriptive Writing to the Tenth Grade Students. *Edukasi*, *7*(1), 38–46.

Meng, Y. (2024). *Writing motivation among Chinese tertiary EFL learners*. Victoria University of Wellington.

Misnawati; As'ari, C. (2023). Error analysis in completing structure section of TOEFL test. *Exposure: Jurnal Pendidikan Bahasa Inggris*, *12*(November), 366–381. https://doi.org/10.26618/exposure.v12i2.12848

Moulidia, L. al. (2022). *Upgrading the students ' ability in writing skill through implementation of directive feedback method*. *2*(2), 1–14. https://doi.org/https://doi.org/10.51179/jeess.v2i2.1530

Mu'awiah, Khairiah, D., & Rais, M. A. (2025). Digital comics as an innovative strategy to foster reading interest among fifth-grade students: Evidence from indonesian elementary education. *Journal of Contemporary Gender and Child Studies (JCGCS)*, *4*(3), 370–379. https://doi.org/https://doi.org/10.61253/jcgcs.v4i3.472

Nadia, Z., Halim, A., & Khatimah, K. (2025). Mindful learning strategies in english language teaching: an investigation of teachers' classroom practices and student engagement. *Exposure: Jurnal Pendidikan Bahasa Inggris*, *14*(November), 331–345. https://doi.org/10.26618/wkg96q43

Copyright ©2026, ISSN: 2252-7818 E-ISSN: 2502-3543

Nguyen, H. M., & Chu, T. A. (2024). Written corrective feedback in second language writing: a review of research. *REFLections*, *31*(2), 858–870. https://doi.org/10.61508/refl.v31i2.275269

Nhi, N. H. et. (2022). Written corrective feedback strategies applied by Van Lang University's EFL lecturers in teaching online. *AsiaCALL Online Journal*, *13*(2), 21–41. https://doi.org/https://doi.org/10.54855/acoj.221322

Octaberlina, L. R. (2023). Exploring the use of digital technology in English language teaching: Strategies and methods for effective implementation. *English Franca : Academic Journal of English Language and Education*, *7*(1), 175. https://doi.org/10.29240/ef.v7i1.6977

Orellana, X., & Mayorga, J. (2021). Pixton as a digital teaching tool to encourage the writing skill. *Ciencia Digital*, *5*(3), 20–35. https://doi.org/10.33262/cienciadigital.v5i3.1621

Parico, A., & Layco, E. (2020). A descriptive analysis of the critical thinking and argumentation skills of science, technology, engineering, and mathematics students. *International Journal of Innovation, Creativity and Change*, *14*(8). https://doi.org/10.13140/RG.2.2.13209.03684

Pham, V. P. H., & Truong, M. H. (2021). Teaching writing in vietnam's secondary and high schools. *Education Sciences*, *11*(10), 1–23. https://doi.org/10.3390/educsci11100632

Pitukwong, K., & Saraiwang, S. (2024). Exploring the effectiveness of digital writing tools on Thai EFL students' writing. *Contemporary Educational Technology*, *16*(3), ep519. https://doi.org/10.30935/cedtech/14808

Pratama, R. M. D., & Hastuti, D. P. (2024). The use of artificial intelligence to improve EFL students' writing skill. *English Learning Innovation*, *5*(1), 13–25. https://doi.org/10.22219/englie.v5i1.30212

Sabat, Y., & Aisyah, S. (2022). *Questioning Strategy Used by EFL Teacher in Teaching Descriptive Text at State Junior High School*. *07*(01), 85–95.

Sahin, A. N. E. ;, & Erol, H. K. (2022). A digital educational tool experience in history course: Creating digital comics via Pixton Edu. *Journal of Educational Technology and Online Learning*, *5*(1), 223–242. https://doi.org/10.31681/jetol.983861

Sahmadan, S., & Hasan, I. (2023). *Direct and indirect written corrective feedback in learning writing : The students ' perception*. *3*(2), 139–146.

Samosir, Tiondina; Napitupulu, S. (2026). The impact of peer teaching on eleventh-grade students' ability to write descriptive texts at SMK 1 Tamansiswa Pematangsiantar. *Journal of Innovative Practices in Education (JIPE)*, *01*(02), 123–133. https://doi.org/10.58540/jipe.v1i2.1381

Sugiharti, Beti; Sudirman; Sukerama, G. (2020). Students' writing ability in writing descriptive text by using mind mapping technique (a classroom action research in class x-a upw). *Mimbar Pendidikan Indonesia*, *1*(1), 23–32. https://doi.org/10.23887/mpi.v1i1.27838

Sun, Q., Zhang, L. J., & Carter, S. (2024). English as a foreign language learners' metacognitive experiences and writing development: Unraveling the process of learning EFL writing. *Learning and Individual Differences*, *115*(August), 102540. https://doi.org/10.1016/j.lindif.2024.102540

Supiatman, L. (2024). The effect of using round table technique on student' s ability in writing descriptive text. *Exposure: Jurnal Pendidikan Bahasa Inggris*,

Copyright ©2026, ISSN: 2252-7818 E-ISSN: 2502-3543

13(May), 171–178. https://doi.org/10.26618/exposure.v13i1.12994

Tekin, E., & İlhan, G. O. (2025). The use of digital comics in foreign language teaching: Experiences of Erasmus students. *European Journal of Education*, *60*(2), 1–18. https://doi.org/10.1111/ejed.70090

Thahir, & Latifa. (2025). *Enhancing students' writing development through multimodal literacy integration: a qualitative case study in higher education*. *14*(November), 524–531. https://doi.org/10.26618/ac3zz933

Ulviani, M. (2025). The impact of error feedback on students' writing accuracy in indonesian language learning. *Research Square*, *1*(1), 1–20. https://doi.org/https://doi.org/10.21203/rs.3.rs-7625125/v1

Wahyuni; Irma. (2019). Journal of english education. *Journal of English Education*, *2*(2), 5–9.

Xiaomeng, Z., & Ravindran, L. (2024). The effects of peer feedback provision and reception on lower-proficiency EFL learners ' writing development. *Studies in Educational Evaluation*, *83*(June), 101422. https://doi.org/10.1016/j.stueduc.2024.101422

Yassin, M., & Sood, M. (2024). Implementing genre based approach to improve students' writing skill at efl students in Indonesia. *International Journal of English Education and Linguistics (IJoEEL)*, *6*(1), 101–111. https://doi.org/10.33650/ijoeel.v6i1.8660

Yu, B., & Wang, W. (2025). Using digital storytelling to promote language learning, digital skills and digital collaboration among English pre-service teachers. *System*, *129*(January 2024), 103577. https://doi.org/10.1016/j.system.2024.103577

Zuraini, et all. (2021). Boosting the students in mastering writing skill through the implementation of PPPIE (Point, Presentation, Illustration, Explanation) Technique. *Jurnal CULTURE (Culture, Language, and Literature Review)*, *8*(1), 100–111. https://doi.org/10.53873/culture.v8i1.230

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