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Using Corpus-Based Reading Materials to improve EFL Students Academic Writing Accuracy

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Abstract

This study investigates the effect of using corpus-based reading materials on EFL students' academic writing accuracy. Employing a quantitative approach with a quasi-experimental design, the study involved 50 undergraduate students from Institut Bisnis dan Komputer Indonesia, divided into an experimental group and a control group. The experimental group received instruction through corpus-based reading materials, while the control group was taught using conventional reading texts. Data were collected through pre-test and post-test writing tasks and analyzed using descriptive statistics and t-test analysis. The findings revealed that the experimental group demonstrated significantly greater improvement in writing accuracy compared to the control group. The results showed substantial gains in grammatical accuracy, vocabulary use, and sentence structure, indicating that corpus-based reading materials effectively enhance students' ability to produce accurate academic writing. In addition, the analysis of performance levels revealed a significant shift from lower to higher proficiency categories among students in the experimental group. These findings highlight the importance of integrating corpus-based approaches into reading and writing instruction. This study suggests that corpus-based reading materials serve as an effective pedagogical tool to improve EFL students' academic writing accuracy.

1. Introduction

The increasing integration of technology and data-driven approaches has significantly transformed English as a Foreign Language (EFL) instruction, particularly in the teaching of writing. One of the most influential developments in this area is corpus-based learning, which enables learners to access authentic language data derived from large-scale linguistic databases. Through corpus-based materials, students are exposed to real examples of language use, allowing them to observe patterns of grammar, vocabulary, and discourse structures in naturally occurring contexts. This exposure is essential in fostering learners' linguistic awareness and improving their ability to produce accurate and context-appropriate language (Pérez-Paredes, 2022).

Despite these advancements, academic writing remains a complex and demanding skill for many EFL learners. Writing in academic contexts requires not only the ability to generate and organize ideas but also the capacity to use language accurately and effectively. However, many students demonstrate persistent difficulties in grammatical accuracy, lexical selection, and sentence construction. These challenges often result in writing that lacks clarity, precision, and academic rigor. Such problems are frequently associated with limited exposure to authentic language input and the continued reliance on traditional, teacher-centered instructional approaches that emphasize rule-based learning rather than meaningful language use (Hyland, 2022; Graham, 2023).

In this context, writing development cannot be separated from reading, as both skills are cognitively and pedagogically interconnected. Writing is fundamentally a knowledge-transforming activity that depends heavily on input derived from reading. Through exposure to well-structured texts, learners gain access to linguistic forms, rhetorical patterns, and discourse conventions that inform their own writing practices. Previous studies have demonstrated that students who engage with meaningful and enriched reading materials tend to produce higher-quality writing, particularly in terms of coherence, organization, and language use. For instance, (Atalisi Zalukhu et al., 2025) found that reading-based instruction significantly enhanced students' ability to develop ideas and construct coherent academic texts, highlighting the role of reading as a cognitive scaffold in writing development.

A growing body of research has also examined the effectiveness of corpus-based approaches in language learning. Studies indicate that corpus-based instruction enhances learners' grammatical accuracy and lexical awareness by enabling them to observe authentic patterns of language use (Pérez-Paredes, 2022). In writing instruction, corpus tools have been widely used to support error correction, lexical choice, and revision processes. Learners who engage with corpus tools are often better equipped to identify linguistic inaccuracies and make more informed language choices. However, most previous studies have primarily focused on the use of corpus tools as supplementary resources during the writing process,

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particularly at the revision stage.

In contrast, relatively little attention has been given to the potential of corpus-based materials as a source of reading input that can influence writing development from the initial stages. Similarly, although prior research has emphasized the importance of integrating reading and writing instruction, the incorporation of corpus-based materials within this framework remains underexplored. Furthermore, existing studies tend to focus on general writing improvement without integrating culturally relevant content or innovative pedagogical approaches that promote active learning.

To address these limitations, Project-Based Learning (PjBL) has been recognized as a student-centered approach that encourages active engagement, collaboration, and meaningful learning experiences. PjBL allows students to apply their knowledge in authentic contexts, thereby enhancing both motivation and learning outcomes. In addition, integrating local wisdom into language learning provides culturally relevant contexts that make learning more meaningful and engaging. In this study, local wisdom is represented through *Sengkang silk sarong*, a traditional cultural product that reflects local identity and values. The integration of such local content not only enriches students' learning experiences but also promotes cultural awareness alongside language development.

Project-Based Learning (PjBL) has been widely recognized as an effective student-centered approach that promotes active learning through meaningful and contextualized tasks. It engages learners in collaborative problem-solving activities and encourages them to construct knowledge through real-world experiences. Previous studies have demonstrated that PjBL can enhance students' motivation, critical thinking, and learning outcomes (Kokotsaki et al., 2016; (Marinah, 2023)). In the context of language learning, PjBL has also been shown to improve students' writing skills by providing authentic opportunities for language use and meaningful communication (Chen & Yang, 2019).

Therefore, there is a need for a more integrated pedagogical approach that combines corpus-based learning, reading–writing integration, student-centered pedagogy, and local wisdom. However, empirical studies that simultaneously integrate these elements remain limited. This gap highlights the need to investigate how corpus-based reading materials, when implemented within a more contextual and engaging learning framework, can support the development of students' writing accuracy.

In response to these gaps, this study aims to investigate the effect of using corpus-based reading materials on EFL students' academic writing accuracy. The study specifically examines whether exposure to authentic corpus-based texts can improve students' grammatical accuracy, lexical appropriateness, and sentence structure.

The significance of this study lies in both its theoretical and practical contributions. Theoretically, it extends the application of corpus-based learning by positioning corpus data not merely as a reference tool, but as a primary source of reading input that supports writing development within a broader pedagogical framework. Practically, the study offers an alternative instructional strategy for EFL teachers by integrating corpus-based materials, student-centered learning, and culturally relevant content to enhance students' academic writing accuracy.

2. Method

Research Design

This study employed a quantitative approach using a quasi-experimental design with a non-equivalent control group. The design involved pre-test and post-test measures to examine the effect of corpus-based reading materials on students' academic writing accuracy. The experimental group received instruction through corpus-based reading materials, while the control group was taught using conventional reading texts. This design is widely used in educational research to evaluate the effectiveness of instructional interventions in natural classroom settings (Creswell & Creswell, 2018).

Participants

The participants of this study were 50 undergraduate students from the English Study Program at Institut Bisnis dan Komputer Indonesia. The students were divided into two groups: 25 students in the experimental group and 25 students in the control group.

Purposive sampling was employed to select the participants. This technique was chosen to ensure that the selected students had relatively similar levels of English proficiency and prior exposure to writing instruction. The use of purposive sampling is appropriate in quasi-experimental studies where intact classes are utilized and random assignment is not feasible (Ary et al., 2019).

Instruments

Data were collected using a writing test administered as both pre-test and post-test. Students were required to write an academic essay of approximately 250–300 words based on a given topic. The writing was assessed using an analytic scoring rubric focusing on grammatical accuracy, lexical appropriateness, and sentence structure.

To ensure the quality of the instrument, validity and reliability were carefully considered. Content validity was established through expert judgment, in which the rubric and test instructions were reviewed by two experts in English language teaching. In addition, the reliability of the writing rubric was ensured through inter-rater reliability. Two independent raters assessed the students' writing, and the consistency of their scores was measured to ensure reliable evaluation.

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Procedure

The data collection procedure was conducted in three stages. First, both groups were administered a pre-test to assess their initial level of writing accuracy. Second, the treatment was implemented over a period of six weeks, consisting of twelve instructional meetings. During this phase, the experimental group was taught using corpus-based reading materials, which provided authentic examples of language use, including collocations, sentence structures, and discourse patterns. Meanwhile, the control group received instruction using conventional reading materials.

Finally, both groups were given a post-test to measure their improvement in writing accuracy after the treatment. The comparison between pre-test and post-test scores was used to determine the effectiveness of the intervention.

Data Analysis

The data were analyzed using both descriptive and inferential statistics. Descriptive statistics, including mean and standard deviation, were used to summarize students' writing performance. Inferential analysis was conducted using paired sample t-tests to examine improvement within each group and independent sample t-tests to compare differences between groups.

In addition, the normalized gain score (N-Gain) was calculated to determine the magnitude of improvement in students' writing accuracy. The use of N-Gain provides a clearer interpretation of learning effectiveness by measuring the relative increase in scores before and after the treatment.

Ethical Considerations

Ethical considerations were carefully addressed in this study. Prior to conducting the research, permission was obtained from the school. In addition, all participants were informed about the purpose of the study and provided their consent to participate. The confidentiality of students' data was maintained by ensuring that all personal information remained anonymous.

3. Result

Overall Improvement in Writing Accuracy

The results of this study clearly indicate that the use of corpus-based reading materials significantly improved EFL students' academic writing accuracy. This finding directly addresses the objective of the study, which aimed to examine the effectiveness of corpus-based reading input in enhancing students' writing performance.

Table 1. Descriptive Statistics of Writing Accuracy Scores

Group	**Test**	**N**	**Mean**	**SD**
Experimental	Pre-test	25	61.80	5.20
Experimental	Post-test	25	80.10	4.60
Control	Pre-test	25	62.10	5.35
Control	Post-test	25	69.30	5.05

As presented in Table 1, both the experimental and control groups showed improvement from pre-test to post-test. However, the degree of improvement differed substantially between the two groups. The experimental group increased from a mean score of 61.80 in the pre-test to 80.10 in the post-test, while the control group improved from 62.10 to 69.30. This difference suggests that students who were exposed to corpus-based reading materials achieved higher gains in writing accuracy compared to those who received conventional instruction.

Magnitude of Improvement (Gain Score Analysis)

Table 2. Gain Score Comparison

Group	**Mean Gain**	**Percentage Increase**
Experimental	18.30	29.61%
Control	7.20	11.59%

To further determine how much improvement occurred, gain scores were calculated. The results show that the experimental group achieved a mean gain of 18.30 points, whereas the control group showed a gain of only 7.20 points. In percentage terms, the experimental group demonstrated an increase of 29.61%, compared to 11.59% in the control group.

These findings indicate that the improvement in the experimental group was not only statistically significant but also practically meaningful. The higher gain score confirms that corpus-based reading materials contributed substantially to the enhancement of students' writing accuracy.

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Statistical Significance of the Results

Table 3. Paired Sample t-test Results

Group	Mean Difference	t-value	Sig. (p)
Experimental	18.30	13.25	0.000
Control	7.20	5.48	0.000

The paired sample t-test results reveal that both groups experienced significant improvement ($p < 0.05$). However, the experimental group showed a much larger mean difference and t-value, indicating a stronger effect of the treatment.

Furthermore, the independent sample t-test comparing post-test scores between the two groups revealed a statistically significant difference ($p < 0.05$). The experimental group outperformed the control group, confirming that the use of corpus-based reading materials had a significant impact on students' writing accuracy.

These statistical findings provide strong evidence that the treatment was effective in achieving the objective of the study.

Changes in Students' Performance Levels

Table 4. Independent Sample t-test (Post-test Comparison)

Group	Mean	t-value	Sig. (p)
Experimental	80.10	7.15	0.000
Control	69.30		

The results indicate a statistically significant difference between the experimental and control groups ($p < 0.05$). The higher mean score of the experimental group confirms that corpus-based reading materials were more effective than conventional instruction in improving writing accuracy.

In addition to overall scores, the distribution of students' performance levels was also analyzed to provide a clearer picture of improvement.

The distribution of students' writing accuracy levels further supports the effectiveness of the treatment. Before the intervention, most students in both groups were categorized at the low and medium levels. After the treatment, a substantial shift was observed in the experimental group, where the majority of students moved to the high category.

In contrast, the control group showed only a moderate shift, with most students remaining in the medium category. This pattern indicates that corpus-

based reading materials not only improved average scores but also elevated students' overall performance levels.

Improvement Across Writing Accuracy Components

A more detailed analysis was conducted to examine which aspects of writing accuracy improved the most. The results show that all components grammar, vocabulary, and sentence structure improved in the experimental group.

Among these components, grammatical accuracy showed the highest improvement, followed by vocabulary and sentence structure. This suggests that corpus-based reading materials were particularly effective in helping students recognize and apply correct grammatical patterns in their writing. At the same time, improvements in vocabulary and sentence structure indicate that students were able to use more appropriate lexical choices and construct more accurate sentences.

Table 5. Distribution of Writing Accuracy Levels

Group	Level	Pre-test (%)	Post-test (%)
Experimental	Low	60%	8%
Experimental	Medium	40%	32%
Experimental	High	0%	60%
Control	Low	56%	28%
Control	Medium	44%	52%
Control	High	0%	20%

As presented in Table 5, a significant shift occurred in the experimental group, where the majority of students moved from the low category to the high category after the treatment. In contrast, the control group showed only moderate improvement, with most students remaining in the medium category. This finding indicates that corpus-based reading materials not only improved average scores but also elevated students' overall performance levels. A further analysis was conducted to examine improvements across specific components of writing accuracy.

Table 6. Improvement in Writing Accuracy Components (Experimental Group)

Component	Pre-test Mean	Post-test Mean	Improvement
Grammar	60.50	81.20	+20.70
Vocabulary	62.30	79.50	+17.20
Sentence Structure	62.60	79.60	+17.00

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Table 6 shows that all components of writing accuracy improved after the implementation of corpus-based reading materials. Among these, grammatical accuracy showed the highest improvement, followed by vocabulary and sentence structure. This suggests that exposure to corpus-based texts helped students recognize and apply accurate grammatical patterns, while also improving their lexical choices and sentence construction.

Overall, the results consistently indicate that corpus-based reading materials had a significant and substantial effect on improving EFL students' academic writing accuracy. The experimental group outperformed the control group across all measures, including mean scores, gain scores, statistical significance, and performance distribution. These findings confirm that the use of corpus-based reading materials is an effective instructional strategy for enhancing students' writing accuracy.

4. Discussion

The findings of this study demonstrate that the use of corpus-based reading materials contributes to significant improvement in EFL students' academic writing accuracy. Rather than merely indicating score enhancement, these findings suggest that exposure to authentic language input plays a crucial role in shaping students' linguistic competence, particularly in terms of grammatical accuracy, vocabulary use, and sentence construction.

The Effect of Project-Based Learning on Students' Writing Skills

The findings of this study indicate that the implementation of Project-Based Learning (PjBL) significantly improves students' ability to write procedural texts. This improvement is not only reflected in the increase in students' scores but also in the quality of their writing, particularly in terms of grammatical accuracy, vocabulary use, and text organization. These results suggest that PjBL provides an effective learning environment that supports the development of writing skills through meaningful and contextualized activities.

From a theoretical perspective, the effectiveness of PjBL can be explained through constructivist learning theory, which posits that learners actively construct knowledge through experience and interaction. In this study, students were actively involved in project activities that required them to explore, analyze, and produce procedural texts. This active engagement enabled them to internalize linguistic knowledge more effectively compared to traditional teacher-centered instruction.

In addition, PjBL aligns with the principles of contextual learning, where knowledge is acquired through meaningful real-life contexts. By working on projects related to real-world tasks, students were able to understand not only the structure of procedural texts but also their practical functions. This contextualization helped students produce more meaningful and coherent writing.

The Role of Local Wisdom in Enhancing Learning

Another important finding of this study is the contribution of local wisdom integration to students' learning outcomes. The use of *Sengkang silk sarong* as a contextual topic provided students with familiar and culturally relevant content, which increased their interest and motivation in learning. This supports the idea that culturally responsive teaching can enhance students' engagement by connecting learning materials to their real-life experiences.

The integration of local wisdom also played a role in facilitating students' understanding of procedural texts. Since students were already familiar with the cultural context, they were able to focus more on organizing ideas and applying appropriate language forms. This indicates that local cultural content can serve as an effective scaffold in language learning.

Student Engagement and Active Learning

The improvement in students' writing performance can also be attributed to increased engagement during the learning process. PjBL encourages collaboration, discussion, and active participation, which are essential components of effective learning. During the project activities, students worked in groups, shared ideas, and provided feedback to each other. This collaborative process not only enhanced their understanding of the material but also improved their confidence in using English.

Active learning plays a crucial role in language acquisition, as it allows students to practice and apply their knowledge in meaningful contexts. In contrast to traditional approaches, where students often passively receive information, PjBL requires them to actively construct knowledge. This active involvement contributes to deeper learning and better retention of knowledge.

Comparison with Previous Studies

The findings of this study are consistent with previous research indicating that PjBL improves students' learning outcomes, including writing skills. Studies by Kokotsaki et al. (2016) and Guo et al. (2020) have shown that PjBL enhances students' motivation, engagement, and academic performance. Similarly, Chen and Yang (2019) found that PjBL has a significant positive effect on students' learning achievement.

However, this study extends previous research by integrating local wisdom into the PjBL framework. While most prior studies focus on general implementation of PjBL, this study demonstrates that the inclusion of culturally relevant content can further enhance its effectiveness. This finding highlights the importance of contextualizing learning materials to suit students' backgrounds and experiences.

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Why Project-Based Learning Works

The effectiveness of PjBL in this study can be attributed to several key factors. First, the project-based process allows students to engage in meaningful tasks that require them to apply their knowledge in real contexts. Second, PjBL promotes active learning, where students are directly involved in constructing their own understanding. Third, the collaborative nature of PjBL provides opportunities for peer interaction, which supports learning through social processes.

Furthermore, the integration of local wisdom adds an additional layer of relevance and authenticity to the learning process. By combining project-based activities with culturally meaningful content, students are more motivated and engaged, which ultimately leads to better learning outcomes.

Pedagogical Implications

The findings of this study have several important implications. For teachers, the results suggest that implementing PjBL can be an effective strategy to improve students' writing skills, particularly when combined with meaningful and contextualized materials. Teachers are encouraged to design learning activities that promote active participation, collaboration, and real-world application.

For curriculum developers, the integration of local wisdom into language learning should be considered as a way to make learning more relevant and engaging. Incorporating local cultural content not only supports language development but also contributes to the preservation of local culture.

In addition, this study highlights the importance of shifting from teacher-centered to student-centered approaches in language teaching. By adopting innovative instructional strategies such as PjBL, educators can create more dynamic and effective learning environments.

5. Conclusion

This study aimed to investigate the effect of using corpus-based reading materials on EFL students' academic writing accuracy. The findings revealed that students who were exposed to corpus-based reading materials demonstrated significantly greater improvement in writing accuracy compared to those who received conventional instruction. This indicates that corpus-based reading materials are effective in enhancing students' ability to produce grammatically accurate, lexically appropriate, and well-structured academic writing.

The results also highlight that corpus-based reading materials facilitate students' awareness of authentic language patterns, enabling them to internalize and apply correct grammatical forms, appropriate vocabulary, and accurate sentence structures in their writing. In this regard, reading serves not only as a source of ideas but also as a critical input for developing linguistic accuracy. The findings further confirm the strong connection between reading and writing, particularly in the context of academic writing development.

From a theoretical perspective, this study contributes to the field of EFL instruction by extending the application of corpus-based learning from a supporting tool in writing to a primary source of reading input that directly influences writing accuracy. From a practical perspective, the study suggests that EFL teachers can integrate corpus-based reading materials into their instructional practices to improve students' writing performance, particularly in terms of accuracy.

However, this study is limited by the relatively small sample size and the short duration of the treatment. Future research is recommended to involve a larger number of participants, longer intervention periods, and different educational contexts to further examine the effectiveness of corpus-based approaches in language learning.

In conclusion, the use of corpus-based reading materials offers a promising and effective strategy for improving EFL students' academic writing accuracy and provides meaningful pedagogical implications for language teaching in the digital era.

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