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The Effectiveness of Project-Based Learning in Teaching Students Writing Skill

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Abstrak

Penelitian ini menguji keefektifan pembelajaran berbasis proyek (PBL) dalam pengajaran menulis deskriptif untuk siswa kelas delapan di SMP N 23 Pontianak. Penelitian ini bertujuan untuk mengetahui keefektifan PBL dan dampaknya terhadap kemampuan menulis siswa. Desain pra-eksperimental dengan metode one-group pretest-posttest digunakan, melibatkan 27 siswa dari kelas VIII H, yang dipilih melalui cluster random sampling. Hasil penelitian menunjukkan bahwa nilai p-value lebih tinggi dari nilai t-tabel, yang mengarah pada penerimaan hipotesis alternatif (Ha) dan penolakan hipotesis nol (Ho). Hal ini menunjukkan bahwa PBL secara efektif meningkatkan keterampilan menulis siswa. Analisis ukuran efek menghasilkan skor 1,29, dikategorikan sebagai tingkat efek yang kuat, yang semakin mendukung dampak signifikan dari PBL. Kesimpulannya, PBL efektif dalam meningkatkan keterampilan menulis siswa kelas delapan di SMP N 23 Pontianak. Disarankan agar para pendidik memasukkan PBL ke dalam metode pengajaran mereka untuk meningkatkan kemampuan menulis siswa.

Kata Kunci: *pra-eksperimen, pembelajaran berbasis proyek, keterampilan menulis.*

Abstract

This research examines the effectiveness of project-based learning (PBL) in teaching descriptive writing to eighth-grade students at SMP N 23 Pontianak. The study aims to determine the efficacy of PBL and its impact on students' writing skills. A pre-experimental design with a one-group pretest-posttest method was used, involving 27 students from class VIII H, selected through cluster random sampling. The results showed that the p-value was higher than the t-table value, leading to the acceptance of the alternative hypothesis (Ha) and the rejection of the null hypothesis (Ho). This indicates that PBL effectively enhances students' writing skills. The effect size analysis yielded a score of 1.29, categorized as a strong effect level, further supporting the significant impact of PBL. In conclusion, PBL is effective in improving the writing skills of eighth-grade students at SMP N 23 Pontianak. It is recommended that educators incorporate PBL into their teaching methods to enhance students' writing abilities.

Keywords: pre-experiment, project-based learning, writting skills

INTRODUCTION

Writing as a language skill is the ability to produce a written language. It allows students to improve their writing's independence, clarity, fluency, and creativity. When students master these skills, they will not only be able to read and write, but they will also be able to analyze what they have written, Brown (2015: 427) state that Writing is a process that involves the cognitive processes of thinking, drafting, and revising. The generation of written materials often involves a variety of cognitive processes, including brainstorming,

drafting, and revising, that require an understanding of particular skills. It is important to understand that not all individuals have such abilities naturally.

Writing proficiency development is important to students since it enables them to express their thoughts and ideas by putting them down in writing. Moreover, Bielinska (2015:10), explains that writing proficiency development is essential to students and best aligned with the idea that traditional methods of teaching writing are not enough to meet the needs of all students. Knowing the limitations of traditional writing instructions, educators must find ways through which students can be helped to develop their writing abilities. Among the rational options is project-based learning. Project-based learning encourages students to get involved in practical real-life activities that require writing and involve writing improvement. This means that this method does not only support the acquisition of writing skills but creativity, collaboration, and solving of problems. Not everybody is born with natural writing skills, which implies that other strategies could be implemented to help students acquire better writing skills. Project-based learning gives students a chance to get actively involved in real practical activities that demand the acquisition of writing and communication skills to an advanced level. This way, it sharpens the students in the area of writing and develops creativity, collaboration, and problem-solving abilities among students.

However, implementing project-based learning requires significant planning and resources. Educators must carefully design projects to align with learning objectives and assess student progress effectively. Additionally, project-based learning may pose challenges for students who struggle with self-direction or require more structured guidance. Without proper support, some students may find it overwhelming or fail to grasp essential writing concepts. According to Artini et al (2018 :3), project-based learning is a kind of active, student-centered didactic instruction that may be used at any level of education, from elementary school to higher education, and emphasizes the collaborative creation of something. Project-based learning allows students to take ownership of their learning as they actively explore and solve problems. However, at some schools, students struggle with developing their writing skills in English. A significant contributing factor to this issue is the reliance on conventional teaching methods that fail to engage students in developing the necessary skills for proficient writing.

The above issues also happened by students in SMPN 23 Pontianak. during the observations from the researcher there, the student found it difficult to apply the writing skills. Moreover, from the assessments it revealed that students' writing scores are

consistently low, reflecting their difficulties in organizing ideas, using appropriate vocabulary, and applying correct grammatical structures. Therefore, there is a growing need to implement more dynamic and effective teaching strategies, such as Project-Based Learning (PBL). Project-based learning offers an interactive, student-centered approach that promotes deeper understanding and practical application of writing skills. By engaging students in meaningful projects, project-based learning can enhance their motivation, creativity, and overall proficiency in writing, thereby addressing the current shortcomings observed in their writing performance.

The collective findings from various studies highlight the significant positive impact of Project-Based Learning on students' writing skills. Wulandari and Ahmad (2020), Aghayani and Hajmohammadi (2019), Alotaibi (2020), Soffiany et al. (2020), and Gustiani et al. (2021) reported improvements across different educational contexts. In contrast, this study focused on eighth-grade students at SMP Negeri 23 Pontianak using a pre-experimental design with a one-group pretest-posttest approach. Unlike the quasi-experimental designs used in other studies, this research included effect size calculations, revealing a strong impact of Project-Based Learning. These methodological differences might yield varied findings, but overall, Project-Based Learning is effective in enhancing students' writing proficiency.

In contrast, the researcher study focused on eighth-grade students at SMP Negeri 23 Pontianak, implementing a pre-experimental design with a one-group pretest-posttest approach. The researcher study also included effect size calculations to gauge the strength of the project-based learning impact. While the other studies adopted a different methodological approach, such as quasi-experimental. The researcher's study implemented a pre-experimental design with a one-group pretest-posttest approach, which might yield different findings or interpretations compared to the other studies. While the mentioned studies primarily focus on the effectiveness of project-based learning on students' writing skills in various contexts and settings (such as EFL learners in different countries and educational levels).

METHOD

This section begin with an introduction to the research participants and the settings (place and time). Afterward, the research methods and steps will be elaborated, followed by data collection and data analysis used in this study. Participants in this research were the

eighth-grade students of SMP N 23 Pontianak. The data collection process was obtained in Class H, the class selected by using cluster random sampling. In this research, the sample consisted of one class from a total of seven classes at SMPN 23 Pontianak. Class H was chosen through this cluster random sampling method, ensuring that every class had an equal chance of being selected as the representative sample. This approach ensured that every class had an equal chance of being selected, by selecting Class H through this process, the researcher aimed to ensure that the sample accurately reflects the larger student population, in order to allow the findings to be generalized carefully.

The researcher interest in implementing a pre-experimental design known as a one-group pretest-posttest design. A pre-experimental study is conducted to determine the cause and effect relationship, as well as the strength of the effect after treatment. According to Cohen et al. (2018: 391), an experiment involves changing the value of one variable, known as the independent variable, and then observing the impact caused by this change on another variable, referred as the dependent variable. This research was divided into three steps: conducting a pre-test session, implementing the project-based learning to students, and conducting a posttest session.

In analyzing the data, the researcher used two types of statistical methods. First, descriptive statistics contain overall scores, mean scores, and standard deviation. Furthermore, the researcher used inferential statistics more specifically the t-test. The paired t-test is a statistical method used to determine if there are significant changes in measurements within the same group before and after an intervention (Cresswell, 2018: 616). The researchers used SPSS 22 to analyze the data. To find out the effect size, the researcher counted it manually. The specific stages involved the analysis of the student's scores, mean score, normality of the data, difference score of pre-test and post-test, standard deviation, the effect of treatment, and students' significance score of the pretest and post-test. The result was then viewed and interpreted.

RESEARCH FINDINGS AND DISCUSSION

The researcher found the mean score of the experimental class in the pre-test was 53.3. After two meetings the researcher gave treatment using a project-based learning method, and students were faced with improving writing skills. The researcher found that the mean score of the post-test in the experimental class increased to 64.14. This evidence indicated that teaching using project-based learning methods was successful. Furthermore,

the highest score on the pre-test was 68 and the post-test was 76. The lowest score was 36 and 48. From the calculation above, the project-based learning method has a significant and positive effect on students' writing skills.

Table 1. Table of each aspect pre-test and post-test

No	Aspect	Pre-Test Mean (Max 5)	Percentage	Post-Test Mean (Max 5)	Percentage	Effect Size	Effect Size Level
1	Organization	3.04	60.8%	3.74	74.8%	1.19	Strong Effect
2	Contents	3.15	63%	3.63	72.6%	0.62	Moderate Effect
3	Vocabulary	2.63	52.6%	3.04	60.8%	0.71	Moderate Effect
4	Grammar	2.44	48.8%	2.81	56.2%	0.65	Moderate Effect
5	Mechanics	2.07	41.4%	2.81	56.2%	1.19	Strong Effect

Table 1 shows that. The analysis of pre-test and post-test results highlights substantial improvements in students' writing skills following the implementation of Project-Based Learning (PBL). This intervention had a positive effect on all aspects of writing, including organization, content development, vocabulary usage, grammar, and mechanics. These findings emphasize how effective PBL can be in teaching writing skills to junior high school students. Before the intervention, students struggled with various aspects of writing, particularly mechanics and grammar. Mechanics, which encompasses spelling, punctuation, and formatting, had the lowest mean score in the pre-test, with an average of 2.07 or 41.4%. This indicated that many students had significant difficulties with basic technical writing skills. Grammar also presented challenges, with a pre-test mean score of 2.44 or 48.8%, reflecting students' struggles with sentence structure, correct word usage, and verb tenses. Vocabulary development was another area where students faced difficulties, though to a slightly lesser extent.

The pre-test mean score for vocabulary was 2.63 or 52.6%, indicating that while students had some proficiency, they were not fully confident in selecting and using appropriate words. In contrast, content and organization were relatively stronger aspects. The pre-test mean score for content development was the highest among all the aspects, at 3.15 or 63%, suggesting that students were relatively better at generating ideas and developing their writing. Organization followed closely behind, with a pre-test mean score of 3.04 or 60.8%, indicating that students had a decent understanding of how to structure

their ideas logically. However, despite these strengths, there was still room for improvement in every area of writing, as evidenced by the pre-test results.

After the treatment, the post-test results demonstrated significant progress across all writing aspects, indicating that the use of PBL had a strong positive effect on students' writing abilities. Content development showed the most substantial improvement, with the post-test mean score rising to 3.74 or 74.8%. This suggests that the PBL approach, which involved engaging students in hands-on, collaborative tasks like creating posters, helped them better organize and structure their ideas with greater coherence and detail. Organization also saw significant improvement, with the post-test mean score increasing to 3.63 or 72.6%.

This indicates that students became more adept at arranging their ideas logically, likely due to the practical, real-world tasks that required them to think critically about how to structure their writing. Vocabulary development improved as well, with the post-test mean score rising to 3.04 or 60.8%. This improvement reflects enhanced language proficiency, as students became more confident in selecting and using appropriate words in their writing. Grammar, while still an area needing further attention, showed progress with the post-test mean score increasing to 2.81 or 56.2%. This indicates that students gained a better understanding of grammatical rules, though additional practice is needed to reach optimal levels of proficiency. Mechanics, which initially had the lowest score, saw a notable improvement as well, with the post-test mean score increasing to 2.81 or 56.2%. This suggests that the intervention helped students improve their technical writing skills, such as spelling, punctuation, and formatting.

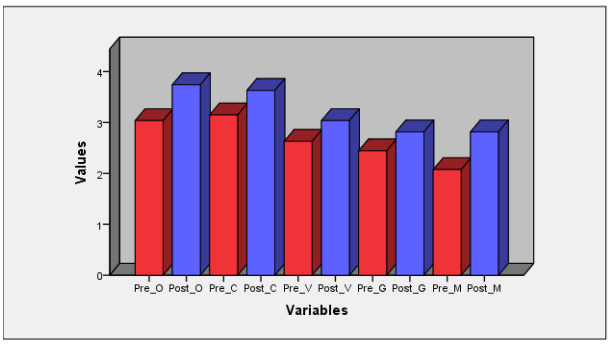

Figure 1. Differences between pre-test and post-test aspects

Overall, the results indicate that PBL was highly effective in improving students' writing skills, particularly in content development, organization, and mechanics. However, to continue building on these gains, ongoing practice and targeted instruction in grammar and mechanics will be crucial. By incorporating more opportunities for students to engage

in practical, hands-on writing tasks, educators can further support the development of these essential skills.

To know the significant difference between the results of the study before and after the treatment has been given, this study has applied inferential statistics by using a t-test paired sample as the normality testing has shown that the results of the pre-test and post-test are in a normal distribution.

Table 2. Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
PreTest	.972	27	.643
PostTest	.944	27	.155

To investigate the normality testing, the researcher will use the Shapiro-Wilk test by using the SPSS 22.0 program. Based on the Shapiro-Wilk test, the significance value for the pre-test scores is 0.643, and for the post-test scores, it is 0.155. Since both values are greater than 0.05, we can conclude that the data for both the pre-test and post-test are normally distributed.

Table 3. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PostTest - PreTest	10.81481	8.36217	1.60930	7.50685	14.12278	6.720	26	.000

Based on table above, result showed that the t-test score 6.720 was higher than the t-table (2.056) at 5% with degree of freedom (df) = 26. It can be concluded, t-value of 6.720 is significantly higher in absolute value than the critical t-table value of 2.056. Additionally, the p-value was .000, which is less than the significance level of 0.05. This means that the difference between the paired samples (Pre-test and Post-test) is statistically significant. This means that the difference between the paired samples (Pre-test and Post-test) is statistically significant., Ha said project-based learning does have an effect on students' writing skills. On the other hand, H0 said that the portion that does not have an effect on writing skills was rejected.

After the researcher had the process of describing the t-test score, the researcher found out the significant effect of the treatment to see how the effectiveness of using project-based learning in teaching writing skills. The formula for effect size is as follows:

$$ES = \frac{\bar{X}_{2-}\bar{X}_1}{Sd}$$

$$ES = \frac{64.14-53,3}{8.36217}$$

$$ES = \frac{10,84}{8.36217}$$

$$ES = 1.29$$

The result of the data was 1.29 considering the interpretation above by Cohen et al,1.29 was higher than 1.00 (1.29>1.00) and it was written that >1.00 indicated the result treatment had a strong effect. It can be concluded that the value of effect size had a strong effect on the student's writing skills after the treatment of project-based learning was applied to the eighth-grade students of SMP N 23 Pontianak in the academic year of 2024/2025.

It can be concluded that project-based learning is effective in teaching student writing by explored the effectiveness of project-based learning (PBL) in teaching writing to eighth-grade students at SMP Negeri 23 Pontianak. The first research problem addressed whether PBL effectively improved students' writing skills. The findings showed that PBL had a positive effect, as indicated by the acceptance of Ha, demonstrating its success in enhancing students' writing abilities. This is consistent with Aghayani and Hajmohammadi's (2019) research on EFL learners in Iran, which also found that PBL significantly improved writing within a collaborative learning environment. Despite cultural and contextual differences, the effectiveness of PBL in both studies suggests its broad applicability across educational settings. The second research problem examined the strength of this effect, with the data revealing a strong positive impact of PBL on students' writing skills. This aligns with Wulandari and Ahmad’s (2020) study, which demonstrated a similar strong effect of PBL on high school students' writing. However, the current research highlights the effectiveness of PBL specifically in the context of eighth-grade students, suggesting that the developmental stage of learners may influence their engagement with and the success of PBL.

CONCLUSION

Based on the result of the research, the researcher concluded that there is a significant effect of using project-based learning method on students’ writing skills of students at SMP N 23 Pontianak. The study found that project-based learning significantly affects students'

writing skills, with a t-test score of 6.720 higher than the critical t-table value of 2.056. The p-value was 000, less than the significance level of 0.05, indicating a statistically significant difference between the pre-test and post-test samples. However, the portion not affecting writing skills was rejected by H0. Therefore, it can be suggested that implementing project-based learning in the classroom has the potential to significantly enhance students' writing abilities. This approach may serve as a valuable strategy for educators to consider when seeking to further support and develop students' writing skills effectively.

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