THE EFFECT OF USING THE PROJECT-BASED LEARNING MODEL TO IMPROVE STUDENTS' WRITING ABILITY

Sari Safitri[1], Loly Novita[2], Destri Wahyuningsih[3]
[1,2,3] English Education Study Program
[1,2,3] STKIP Insan Madani Airmolek, Indonesia
Email:[1]sari25safitri@gmail.com,[2]lolyfachruddin@gmail.com,[3]destri070@gmail.com

ABSTRACT

Writing is an important skill in English learning because it enables students to express ideas and information in written form. However, many students still face difficulties in writing due to limited vocabulary, grammar problems, and the use of conventional teaching methods that make students less active in the learning process. Therefore, an effective and student-centered learning model is needed to improve students' writing ability. This study aimed to determine the effect of the Project-Based Learning (PBL) model on the tenth-grade students' writing ability at SMAN 2 Rengat Barat. This study used a quantitative method with a quasi-experimental design. The sample consisted of 69 students divided into an experimental class and a control class. The experimental class was taught using the Project-Based Learning model, while the control class was taught using the conventional teaching method. The data were collected through pre-test and post-test writing tests and analyzed using SPSS version 27. The findings showed that the experimental class obtained a higher post-test mean score (78.8214) than the control class (58.6765). In addition, the Independent Samples T-Test showed that the Sig. (2-tailed) value was 0.000, which was lower than 0.05. This indicates that the Project-Based Learning model had a significant effect on students' writing ability. Therefore, Project-Based Learning can be used as an effective teaching strategy to improve students' writing performance and classroom participation.

Keywords: *Project-Based Learning, writing ability, historical recount text, English teaching, students' achievement.*

INTRODUCTION

Writing is one of the essential skills in English learning because it allows students to express ideas, opinions, and information in a structured written form. Writing is not only a productive language skill, but also a cognitive and social activity that requires students to organize ideas, use appropriate vocabulary, apply grammar accurately, and communicate meaning clearly to readers Rahayu (2018). In academic contexts, writing plays an important role because students are expected

to produce coherent texts that reflect their understanding, critical thinking, and ability to communicate effectively Hyland (2019).

Writing is often considered one of the most difficult English skills for students. Unlike speaking, writing requires students to think carefully before expressing their ideas because they must pay attention to content, organization, grammar, vocabulary, and mechanics Graham (2019). Therefore, students need continuous practice and appropriate learning strategies to improve their writing ability. Without proper guidance, students may find it difficult to develop ideas, arrange sentences, and produce a complete and meaningful text Klimova (2021).

Based on the preliminary observation at SMAN 2 Rengat Barat, several problems were found in the writing learning process. The learning process was still dominated by a conventional model, where the teacher explained the material, gave examples of texts, and asked students to write individually. As a result, many students showed low enthusiasm, became passive during writing activities, and tended to write only because they were required by the teacher. The teacher also stated that students were less interested in writing because the learning process was not connected to real-life experiences and had not used an innovative learning model such as Project-Based Learning (PBL) .

Project-Based Learning is considered an appropriate model to overcome these problems because it encourages students to learn through meaningful and contextual project activities. Through PBL, students are actively involved in planning, developing, revising, and presenting their written products. This model also gives students opportunities to collaborate with their peers, explore ideas, and connect writing activities with real-life contexts Almulla (2020). In writing instruction, PBL can help students become more motivated because they do not only write for assignment purposes, but also produce real products that reflect their understanding and creativity Fragoulis & Tsiplakides (2020).

Several previous studies have shown that Project-Based Learning can improve students' English writing ability. PBL supports students in developing ideas, enriching vocabulary, increasing confidence, and improving collaboration during the learning process Sari & Pratiwi (2021). In addition, PBL makes the

classroom more student-centered because students are actively involved in the process of producing written texts, from planning to evaluation Putri (022).

At SMAN 2 Rengat Barat, the English writing instruction had previously used the Jigsaw model. Although this model supports cooperation and information sharing, it still gives limited opportunities for students to practice the complete writing process and produce organized texts. Therefore, Project-Based Learning is proposed as an alternative model because it provides more meaningful learning experiences and allows students to develop their writing ability more deeply . Based on this explanation, this study aims to determine the effect of using the Project-Based Learning model to improve the tenth-grade students' ability in writing at SMAN 2 Rengat Barat.

LITERATURE REVIEW

Writing

Writing is a language skill used to communicate directly, but not face-to-face, with other people. According to Henry Guntur Tarigan (2017), writing is a process of expressing thoughts, ideas, and feelings in the form of written language that can be understood by others. Similarly, Dalman (2016) states that writing is an activity of creating graphic symbols that represent language and convey meaning to readers. Therefore, writing can be understood as a process of transforming ideas into meaningful written symbols so that the message can be clearly communicated to the readers. Writing skills are an important aspect of language learning that involve the ability to express ideas effectively in written form. According to Harmer (2018), writing skills refer to the ability to produce language in written form by organizing ideas in a structured manner, selecting appropriate vocabulary, using correct grammar, and conveying messages clearly so that readers can understand them.

In line with this view, Graham and Perin (2020) also state that writing skills involve the ability to develop and process ideas, evaluate information, and communicate them clearly and effectively through writing. They further emphasize that writing is a process that includes several stages, namely planning, drafting, and

revising. Therefore, writing is not only about producing text, but also about organizing thoughts and refining ideas to achieve clarity and coherence in written communication.

Project-Based Learning Model

Project-Based Learning (PBL) is an instructional approach that emphasizes active and practical learning experiences, where students are involved in meaningful tasks that enable them to develop and apply knowledge and skills. Smith (2018) explains that through extended projects requiring in-depth investigation of specific topics or questions, students can acquire essential skills in a more meaningful way. In addition, Kokotsaki, Menzies, and Wiggins (2016) state that PBL supports deeper learning by encouraging collaboration, critical thinking, and student engagement in authentic tasks. Similarly, Shin (2018) highlights that the implementation of PBL can improve students' confidence and increase their motivation to learn.

Furthermore, Project-Based Learning is a student-centered instructional model that differs from traditional teaching methods because it places learners as active participants in the learning process. According to Nurhidayah, Wibowo, and Astra (2021), PBL emphasizes student-centered learning in which students take an active role in constructing their own knowledge through real and meaningful learning experiences. In line with this, Sari and Angreni (2018) explain that PBL allows students to be directly involved in solving real-life problems in their environment, which helps them develop critical thinking and problem-solving skills as they work on their projects.

Therefore, in this study, the researcher implemented Project-Based Learning as an experimental treatment to improve students' writing performance because it provides opportunities for students to learn actively, creatively, and collaboratively.

RESEARCH METHOD

This study used a quantitative method with a quasi-experimental design to investigate the effect of the Project-Based Learning (PBL) model on students'

writing ability. The treatment was conducted in four meetings in the experimental class, with each meeting lasting 90 minutes. During the treatment, the researcher applied the Project-Based Learning (PBL) model in teaching writing. The implementation included determining the driving question, designing the project plan, developing the project schedule, monitoring project implementation, assessing project outcomes, and evaluating the learning experience. In this study, students were assigned to create a scrapbook project containing a historical recount text about historical events in Indonesia. Through these activities, students collaboratively developed their ideas and improved their writing skills.

The research was conducted at SMA Negeri 2 Rengat Barat from February 11 to April 24, 2026. The population consisted of 140 tenth grade students divided into four classes. The sample was selected through simple random sampling using a lottery method, resulting in two classes: class X.2 as the experimental group with 35 students and class X.4 as the control group with 34 students. So, a total of 69 students.

The data were collected through observation, tests, and documentation. The research instrument was a writing test consisting of pre-test and post-test, assessed using a writing rubric adapted from Ken Hyland (2016), covering content, organization, vocabulary, grammar, and mechanics. The experimental group was taught using the project-based learning model, while the control group was taught using conventional learning.

The data were analyzed using SPSS 27 through normality test, homogeneity test, and Independent Sample T-Test to determine the significant effect of the Project-Based Learning model on students' writing ability.

FINDINGS AND DISCUSSION

This chapter presents the research findings on the effect of the Project-Based Learning (PBL) model on the tenth grade students' writing ability at SMAN 2 Rengat Barat. The study involved two groups, namely an experimental class that was taught using the PBL model and a control class that was taught using the conventional teaching method.

Descriptive Statistics

Descriptive statistical analysis of the students' post-test scores in the experimental and control classes:

Table 1. Descriptive Statistic Data

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test Eksperimen	35	37,50	45,00	40,5714	1,93133
Post-test Eksperimen	35	76,50	82,00	78,8214	1,46976
Pre-test Control	34	37,00	44,00	40,2647	1,82672
Post-test Control	34	54,00	64,00	58,6765	2,55510
Valid N (listwise)	34				

Based on Table 1, both the experimental and control classes had relatively similar initial abilities, as reflected in the mean pre-test scores of 40.5714 in the experimental class and 40.2647 in the control class. However, after the treatment was implemented, the experimental class demonstrated a more significant improvement compared to the control class.

Results of Writing Ability Pre-Test and Post-Test

This study investigated the effect of the Project-Based Learning (PBL) model on the writing ability of tenth-grade students at SMAN 2 Rengat Barat. The data collected from both the experimental and control classes were analyzed using SPSS version 27. The results of the pre-test and post-test scores from both groups are presented below.

Control Class Writing Ability

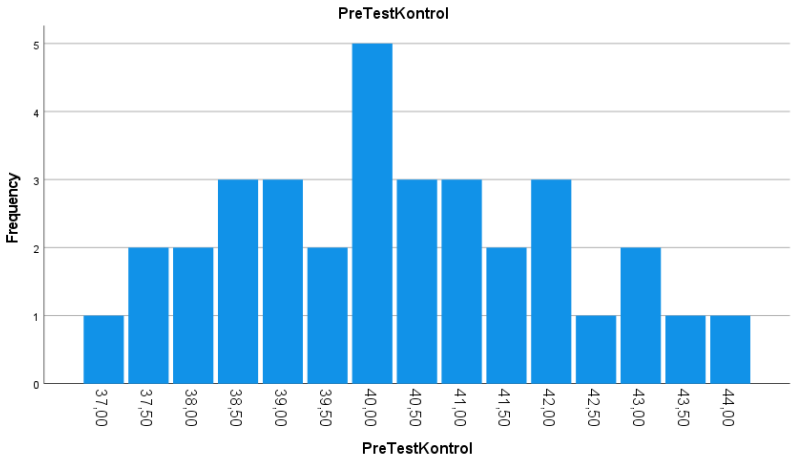
Based on the pre-test results in the control class, the highest score obtained by the students was 44.00, while the lowest score was 37.00. The data were collected from the research findings and analyzed using IBM SPSS Statistics version 27.

Table 2. Frequency Distribution of Pre-Test Scores in the Control Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	37,00	1	2,9	2,9	2,9
	37,50	2	5,9	5,9	8,8
	38,00	2	5,9	5,9	14,7
	38,50	3	8,8	8,8	23,5
	39,00	3	8,8	8,8	32,4

		Frequency	Percent	Valid Percent	Cumulative Percent
	39,50	2	5,9	5,9	38,2
	40,00	5	14,7	14,7	52,9
	40,50	3	8,8	8,8	61,8
	41,00	3	8,8	8,8	70,6
	41,50	2	5,9	5,9	76,5
	42,00	3	8,8	8,8	85,3
	42,50	1	2,9	2,9	88,2
	43,00	2	5,9	5,9	94,1
	43,50	1	2,9	2,9	97,1
	44,00	1	2,9	2,9	100,0
	Total	34	100,0	100,0	

Histogram 1. Control Class Pretest Result

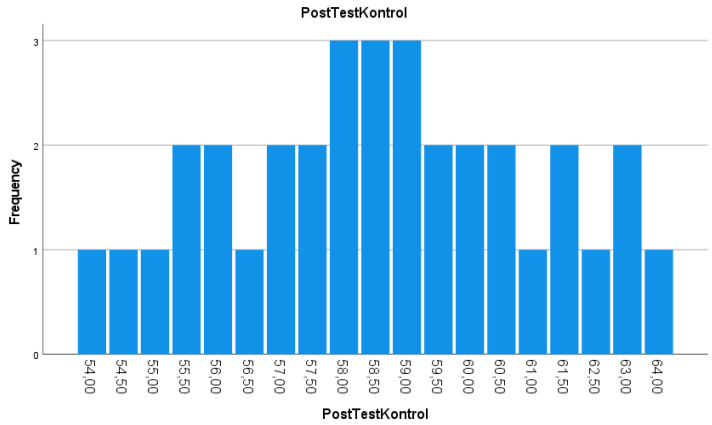


The histogram 1. illustrates that the pre-test scores of the control class ranged from 37.00 to 44.00. The scorewith the highest frequency was 40.00, which was obtained by 5 students. Most of the students' scores were distributed between 38.50 and 42.00, indicating that the students' initial ability in writing historical recount texts in the control class was relatively similar before the treatment was conducted. The post-test results in the control class ranged from 54.00 to 64.00, with the most frequent scores being 58.00, 58.50, and 59.00. Overall, most students' scores were concentrated around 57.00 to 60.00, indicating a moderate level of writing performance in the control class.

Table 3. Frequency Distribution of Post-Test Scores in the Control Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	54,00	1	2,9	2,9	2,9
	54,50	1	2,9	2,9	5,9
	55,00	1	2,9	2,9	8,8
	55,50	2	5,9	5,9	14,7
	56,00	2	5,9	5,9	20,6
	56,50	1	2,9	2,9	23,5
	57,00	2	5,9	5,9	29,4
	57,50	2	5,9	5,9	35,3
	58,00	3	8,8	8,8	44,1
	58,50	3	8,8	8,8	52,9
	59,00	3	8,8	8,8	61,8
	59,50	2	5,9	5,9	67,6
	60,00	2	5,9	5,9	73,5
	60,50	2	5,9	5,9	79,4
	61,00	1	2,9	2,9	82,4
	61,50	2	5,9	5,9	88,2
	62,50	1	2,9	2,9	91,2
	63,00	2	5,9	5,9	97,1
	64,00	1	2,9	2,9	100,0
	Total	34	100,0	100,0	

Histogram 2. Control Class Post-Test Result



Histogram 2. shows the post-test results of the control class. The students' scores ranged from 54.00 to 64.00. The highest frequencies were found at the scores of 58.00, 58.50, and 59.00, each obtained by 3 students. Most of the students' scores were distributed between 57.00 and 60.50.

Table. 4. Classification of Students' Writing Ability Scores in Control Class

No	Category	Score	Frequency	Percentage
1	Low	< 56.12	7	20.6%
2	Medium	56.12 ≤ X ≤ 61.23	21	61.8%
3	High	> 61.23	6	17.6%
Total			34	100%

Based on Table 4, 7 students, or 20.6%, were classified into the Low category. Furthermore, 21 students, or 61.8%, were included in the Medium category, while 6 students, or 17.6%, were categorized as High. Therefore, it can be concluded that most of the students' historical recount text writing ability scores in the control class were classified in the Medium category.

Students' Writing Ability in the Experimental Class Using the Project-Based Learning Model

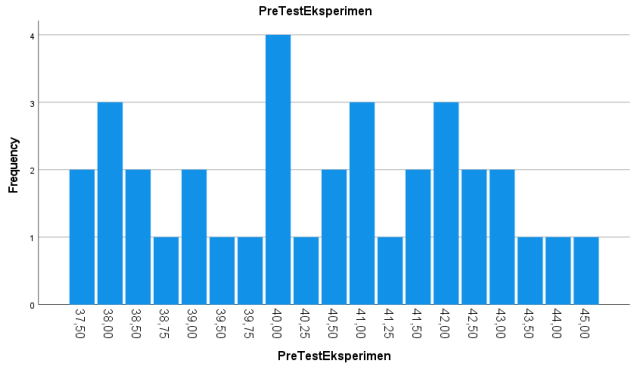
For the experimental class, the pre-test scores ranged from 37.50 to 45.00. In addition, the scores of 38.00, 41.00, and 42.00 were each obtained by 3 students with a percentage of 8.6%. The description of the pre-test data on students' historical recount text writing ability in the experimental class is presented as follows.

Table 5. Frequency Distribution of Pre-Test Scores in the Experiment Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	37,50	2	5,7	5,7	5,7
	38,00	3	8,6	8,6	14,3
	38,50	2	5,7	5,7	20,0
	38,75	1	2,9	2,9	22,9
	39,00	2	5,7	5,7	28,6
	39,50	1	2,9	2,9	31,4
	39,75	1	2,9	2,9	34,3
	40,00	4	11,4	11,4	45,7
	40,25	1	2,9	2,9	48,6
	40,50	2	5,7	5,7	54,3
	41,00	3	8,6	8,6	62,9
	41,25	1	2,9	2,9	65,7
	41,50	2	5,7	5,7	71,4
	42,00	3	8,6	8,6	80,0
	42,50	2	5,7	5,7	85,7
	43,00	2	5,7	5,7	91,4
	43,50	1	2,9	2,9	94,3

		Frequency	Percent	Valid Percent	Cumulative Percent
	44,00	1	2,9	2,9	97,1
	45,00	1	2,9	2,9	100,0
	Total	35	100,0	100,0	

Histogram 3. Experimental Class Pre-Test Result



Histogram 3. presents the pre-test results of the experimental class. The students' scores ranged from 37.50 to 45.00. The highest frequency was found at the score of 40.00, which was obtained by 4 students. In addition, the scores of 38.00, 41.00, and 42.00 were each obtained by 3 students. Most of the students' scores were distributed between 38.00 and 43.00.

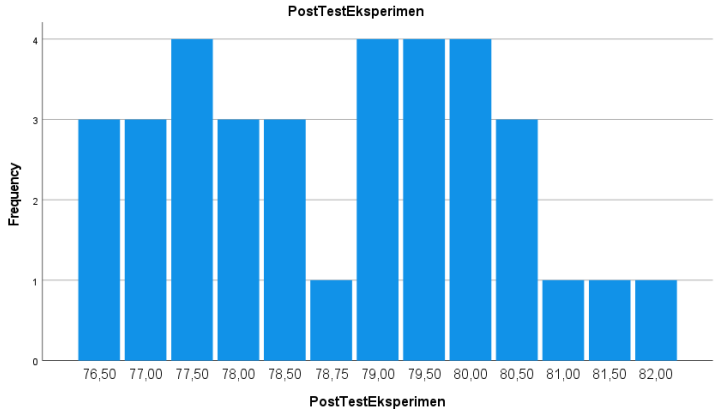
The post-test scores in the experimental class ranged from 76.50 to 82.00. The most frequent scores were 77.50, 79.00, 79.50, and 80.00, each obtained by 4 students. Overall, most students achieved scores between 77.00 and 80.00, indicating a high level of improvement in writing performance.

Table 6. Frequency Distribution of Post-Test Scores in the Experiment Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	76,50	3	8,6	8,6	8,6
	77,00	3	8,6	8,6	17,1
	77,50	4	11,4	11,4	28,6
	78,00	3	8,6	8,6	37,1
	78,50	3	8,6	8,6	45,7
	78,75	1	2,9	2,9	48,6
	79,00	4	11,4	11,4	60,0
	79,50	4	11,4	11,4	71,4
	80,00	4	11,4	11,4	82,9
	80,50	3	8,6	8,6	91,4
	81,00	1	2,9	2,9	94,3

		Frequency	Percent	Valid Percent	Cumulative Percent
	81,50	1	2,9	2,9	97,1
	82,00	1	2,9	2,9	100,0
	Total	35	100,0	100,0	

Histogram 4. Experimental Class Post-Test Result



Histogram 4. presents the post-test results of the experimental class after the students received treatment through the implementation of the Project-Based Learning (PBL) model. The students' scores ranged from 76.50 to 82.00. The highest frequencies were found at the scores of 77.50, 79.00, 79.50, and 80.00, each obtained by 4 students. Most of the students' scores were distributed between 77.50 and 80.00.

Table 7. Classification of Students' Writing Skills Scores in Experiment Class

No	Category	Score	Frequency	Percentage
1	Low	< 77.35	6	17.1%
2	Medium	77.35 ≤ 80.29	23	65.7%
3	High	> 80.29	6	17.1%
Total			35	100%

Based on Table 7, the classification of students' historical recount text writing ability scores in the experimental class indicates that 6 students, or 17.1%, were classified into the Low category. Furthermore, 23 students, or 65.7%, were included in the Medium category, while 6 students, or 17.1%, were categorized into the High category. Therefore, it can be concluded that most students' writing ability scores in the experimental class were classified in the Medium category after receiving treatment through the Project-Based Learning (PBL) model.

Data Analysis

Normality Test

The normality test was conducted to assess if the data from the control and experimental classes followed a normal distribution. This test is essential before conducting parametric tests. SPSS version 27 was used for the analysis. A significance value greater than 0.05 indicates normal distribution.

Table 8. Sample Class Normality Test Analysis Results

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-Test Exsperimen	,080	35	,200*	,972	35	,507
Post-Test Exsperimen	,102	35	,200*	,968	35	,416
Pre-Test Control	,087	34	,200*	,978	34	,694
Post-Test Control	,067	34	,200*	,983	34	,853
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Based on Table 8, the results of the Shapiro-Wilk test, the significance value of the pre-test in the experimental class was 0.507, while the post-test obtained a significance value of 0.416. In the control class, the significance value of the pre-test was 0.694 and the post-test was 0.853. Since all significance values were greater than 0.05, it can be concluded that all pre-test and post-test data in both the experimental and control classes were normally distributed. Therefore, all data in this study met the normality assumption and could be continued to the homogeneity test.

Homogeneity Test

The homogeneity test was conducted to assess if the variance in the control and experimental classes was equal, which is essential for parametric testing. This test was performed using SPSS version 27 with Levene's Test. Data are considered homogeneous if the significance value is greater than 0.05.

Table 9. Homogeneity Test Result

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Result	Based on Mean	,129	1	67	,720
	Based on Median	,148	1	67	,702
	Based on Median and with adjusted df	,148	1	66,998	,702
	Based on trimmed mean	,120	1	67	,730

The significance value in the based on mean row was 0.720, the significance value based on the median was 0.702, the significance value based on the median with adjusted df was 0.702, and the significance value based on the trimmed mean was 0.730. All of these significance values were higher than 0.05, indicating that there was no significant difference in variance between the two groups. Therefore, the assumption of homogeneity was met, allowing the analysis to proceed with the hypothesis test using parametric statistics. This confirms that the two classes were statistically comparable.

Hypothesis Test

The hypothesis test aimed to determine whether the Project-Based Learning (PBL) model had a significant effect on the writing ability of tenth-grade students at SMAN 2 Rengat Barat. The test was conducted using an Independent Samples T-Test with SPSS version 27 by comparing the post-test scores of the experimental and control classes after the treatment was given.

Table 10. Independent Sample Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Result	Equal variances assumed	5,599	,021	24,191	67	,000	19,47206	,80492	17,86543	21,07868
	Equal variances not assumed			24,480	41,398	,000	19,47206	,79543	17,86613	21,07799

The significance value of Levene's Test for Equality of Variances was 0.021. Therefore, the assumption of equal variances was used. The t-test result showed that the t-value was 24.480 with df = 41.398. The significance value of Sig. (2-tailed) was 0.000, which was lower than 0.05. This indicates that there was a significant difference between the post-test scores of the experimental class and the control class. The Mean Difference value was 19.47206, indicating that the average post-test score of the experimental class was higher than the control class by approximately 19.47 points.

Since the 95% confidence interval ranged from 17.86613 to 21.07799, and since the interval did not include zero, the difference between the two groups was statistically significant. Thus, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted. It can be concluded that the Project-Based Learning (PBL) model had a significant effect on the writing ability of tenth-grade students.

CONCLUSION

Based on the research findings, it can be concluded that the Project-Based Learning (PBL) model had a significant effect on the tenth-grade students' ability in writing at SMAN 2 Rengat Barat. The experimental class achieved a higher post-test mean score (78.8214) than the control class (58.6765). In addition, the Independent Samples T-Test showed that the Sig. (2-tailed) value was 0.000, which was lower than 0.05. Therefore, the alternative hypothesis (H_a) was accepted and the null hypothesis (H_0) was rejected. This study suggests that Project-Based Learning can be used as an effective teaching strategy to improve students' writing ability. Future researchers are also encouraged to investigate the implementation of PBL in other English skills or different educational contexts.

REFERENCES

Almulla, M. A. (2020). *The effectiveness of the project-based learning (PBL) approach as a way to engage students in learning*. SAGE Open*, 10*(3), 1–15.

Dalman. (2016). *Writing skills*. Rajawali Pers.

Fragoulis, I., & Tsiplakides, I. (2020). *Project-based learning in teaching English as a foreign language in Greek primary schools: From theory to practice*. English Language Teaching, *2*(3), 113–119.

Graham, S. (2019). *Changing how writing is taught*. Review of Research in Education*, 43*(1), 277–303.

Graham, S., & Perin, D. (2020). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools*. Alliance for Excellent Education.

Harmer, J. (2018). *The practice of English language teaching* (5th ed.). Pearson Education.

Hyland, K. (2016). *Teaching and researching writing* (3rd ed.). Routledge.

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

Klimova, B. F. (2021). Evaluating writing in English as a second language. *Procedia - Social and Behavioral Sciences, 3*(2), 390–394.

Kokotsaki, D., Menzies, V., & Wiggins, A. (2016). Project-based learning: A review of the literature. *Improving Schools, 19*(3), 267–277.

Nurhidayah, I. J., Wibowo, F. C., & Astra, I. M. (2021). *Project-based learning in improving students' critical thinking skills and creativity.* Journal of Physics: Conference Series, 2019(1), 1–7. https://doi.org/10.1088/1742-6596/2019/1/012062

Putri, D. A. (2022). *The implementation of project-based learning in improving students' writing skills.* Journal of English Education and Teaching, 6(2), 145–154.

Rahayu, S. (2018). The importance of writing skills in English language learning. *Journal of English Language Teaching, 7*(1), 15–22.

Sari, R. T., & Angreni, S. (2018). The implementation of project-based learning to improve students' creativity. *Journal of Biology and Science Education, 1*(1), 50–58.

Sari, D. P., & Pratiwi, R. (2021). The effect of project-based learning on students' writing ability. *Journal of English Teaching and Research, 6*(1), 45–53.

Shin, M. H. (2018). Effects of project-based learning on students' motivation and self-confidence. *English Teaching, 73*(1), 95–114.

Smith, J. (2018). *Project-based learning and student engagement in the classroom*. Oxford University Press.

Tarigan, H. G. (2017). *Writing as a language skill*. Angkasa.