

THE EFFECTIVENESS OF PROJECT-BASED LEARNING (PJBL) IN ENHANCING STUDENTS' WRITING SKILLS

Nofa Elok Ramdania¹, Benny Krisbiantoro¹, Muhammad Soali¹

¹English Education Department, Faculty of Social Sciences, Universitas Harapan Bangsa

¹nofaelokramdania18@gmail.com*; krisbiantorobenny@gmail.com; muhammadsoali@uhb.ac.id

ABSTRAK

Penelitian ini bertujuan untuk menilai efektivitas Pembelajaran Berbasis Proyek (PjBL) dalam meningkatkan keterampilan menulis siswa kelas XI di SMA Muhammadiyah 1 Purwokerto. Penelitian ini menggunakan desain quasi-eksperimental dengan kelompok eksperimen yang diajarkan menggunakan PjBL dan kelompok kontrol yang menggunakan Direct Instruction (DI). Sampel penelitian ini terdiri dari 59 siswa, dan data dikumpulkan melalui pre-test dan post-test untuk mengukur keterampilan menulis argumentatif mereka. Hasil penelitian menunjukkan bahwa kelompok eksperimen mengalami peningkatan signifikan dalam keterampilan menulis mereka, dengan rata-rata peningkatan 10,24 poin ($\Delta = 10,24$) dibandingkan dengan kelompok kontrol yang hanya meningkat 6,13 poin ($\Delta = 6,13$). Hasil uji t independen menunjukkan perbedaan signifikan antara kedua kelompok pada tingkat signifikansi 0,004. Temuan ini menunjukkan bahwa PjBL lebih efektif dibandingkan dengan DI dalam meningkatkan kemampuan menulis siswa, mendorong kreativitas, dan mengembangkan pemikiran kritis. Penelitian ini menekankan pentingnya penerapan pembelajaran inovatif yang berpusat pada siswa dalam pengajaran menulis.

Kata kunci: *Project-Based Learning, Keterampilan Menulis, Direct Instruction, Teks Argumentatif, Efektivitas Pembelajaran*

ABSTRACT

This study aimed to assess the effectiveness of Project-Based Learning (PjBL) in enhancing the writing skills of grade XI students at SMA Muhammadiyah 1 Purwokerto. The study used a quasi-experimental design with an experimental group taught using PjBL and a control group using Direct Instruction (DI). The sample consisted of 59 students, and data were collected through pre-test and post-test measuring their argumentative writing skills. The results indicated that the experimental group showed a significant improvement in their writing skills, with an average increase of 10.24 points ($\Delta = 10.24$) compared to the control group's 6.13 points ($\Delta = 6.13$). The independent t-test results demonstrated a significant difference between the two groups at the 0.004 level. These findings suggest that PjBL is more effective than DI in enhancing students' writing abilities, fostering creativity, and encouraging critical thinking. The study highlights the importance of implementing innovative, student-centered approaches in writing instruction.

Keywords: *Project-Based Learning, Writing Skills, Direct Instruction, Argumentative Text, Learning Effectiveness*

INTRODUCTION

Writing is one of the productive skills that has a central role in learning English. Through writing activities, students not only learn to express ideas and feelings, but also develop logical, critical, and creative thinking skills. Hyland (2016) affirms that writing is a complex cognitive process, where

students must be able to organize ideas, organize them in the right structure, as well as connect arguments so that they are easy for readers to understand. Therefore, writing skills are often considered a benchmark of a student's success in mastering a foreign language because writing reflects the student's ability to integrate various aspects of language and high-level thinking.

Despite this, writing skills are still one of the most difficult aspects for students to master. Compared to receptive skills such as reading and listening, writing demands more complex mastery. Students must not only understand grammar and vocabulary, but also be able to compose texts in a sequential and logical manner. Ajra et al. (2023), revealed that students' difficulties in writing usually lie in the lack of ability to organize ideas, limited vocabulary, and repeated grammatical errors. Besides, teaching writing skills faces some challenges such as limited exposures, motivation and adequate resources (Krisbiantoro & Soali, 2024). These barriers often cause students to feel less confident in writing, even making them perceive writing as a burdensome skill.

This condition is also seen in the learning practice at SMA Muhammadiyah 1 Purwokerto. The results of interviews with English teachers show that most students still have difficulty writing argumentative texts. Many of them prefer to use online translation applications such as Google Translate to compose sentences. While these apps can help, over-reliance prevents students from making an effort to develop their own writing skills. This is in accordance with the opinion Deveci (2019) which emphasizes that the overuse of translator technology can hinder the mastery of writing skills because students do not really understand the critical thinking processes required in the preparation of texts.

In fact, the ability to write argumentative texts is very important for students at the high school level. Argumentative texts not only demand that students express opinions, but also that they structure them with logical evidence and respond critically to counterarguments. Harahap (2022) emphasized that argumentative writing skills are closely related to the development of critical, analytical, and rational thinking skills. These skills are among the 21st-century competencies that students urgently need, both to continue their education to a higher level and to face real-life challenges. By mastering this ability, students can learn to think systematically, defend arguments, and make decisions based on strong reasons.

Unfortunately, in classroom learning practice, writing skills are often taught with traditional approaches, one of which is Direct Instruction (DI). This learning model focuses on teacher explanations, giving examples, and structured

exercises that students do. Stockard et al. (2018) explained that DI has proven to be effective in conveying material clearly and systematically, especially on basic concepts. However, the disadvantage lies in its overly teacher-centered nature, so students have fewer opportunities to actively participate. As a result, learning to write using DI often leaves students with only following instructions without actually engaging in the process of critical thinking.

As a solution to these limitations, the Project-Based Learning (PjBL) is one of the right alternatives. PjBL is a learning model that emphasizes students' active involvement through cooperation, problem-solving, and the creation of real products that are relevant to their lives. According to Krajcik & Blumenfeld (2006), PjBL allows students to develop critical thinking skills as they are encouraged to question, research, and connect concepts with real context. In line, Sah et al. (2024) emphasizes PjBL that fosters the 21st century skills like critical thinking, creativity, collaboration, and communication. Thus, students not only learn the language as a set of rules, but also use it for more meaningful purposes.

A number of previous studies have proven the effectiveness of PjBL in improving students' writing skills. Kristiana (2023) found that the application of PjBL can improve the quality of students' narrative writing because they are actively involved in each stage of learning. Dewi (2015) shows that PjBL is also effective in learning to write descriptive texts, while the research Arochman et al. (2024) emphasized that PjBL is able to improve the aspect of coherence and the use of students' vocabulary in writing. From these various findings, it can be concluded that PjBL has great potential to be applied to various types of texts, including argumentative texts that require critical and logical thinking skills.

Against this background, this study was conducted to compare the effectiveness of the application of PjBL and DI in improving the argumentative writing skills of grade XI students of SMA Muhammadiyah 1 Purwokerto. The results of this research are expected to contribute to the development of English learning strategies, especially in improving students' writing skills to be more creative, critical, and communicative.

RESEARCH METHODS

This study used a quantitative approach with a quasi-experimental design of a non-equivalent control group type. This design was chosen because the conditions in the school did not allow the researcher to do a full randomization of the class. In such situations, the existing class is still used, and then it is designated as the experimental group and the control group. Sugiyono (2013) explains that a quasi-experimental design is the right approach when researchers want to test the effectiveness of a learning method, but cannot control all research variables. With this design, researchers can still compare learning outcomes between the treated group and the non-treated group, so that the effectiveness of the learning method can be tested systematically.

Before conducting the research, the researcher first obtained a research permit from Harapan Bangsa University Purwokerto, as well as official permission from SMA Muhammadiyah 1 Purwokerto as the location for the research. This licensing process ensured that the research activities were conducted ethically, respected school policies, and maintained the confidentiality and comfort of the research participants.

The population of this study is all students of grade XI of SMA Muhammadiyah 1 Purwokerto in the 2025/2026 school year. From this population, the researcher selected two classes as samples using purposive sampling techniques. The selection is made based on the suitability of the lesson schedule, ease of access, and recommendations of the subject teacher. Class XI Merdeka 2, consisting of 29 students, was designated as an experimental group and taught with Project-Based Learning (PBL), while class XI Merdeka 5, which consisted of 30 students, was used as a control group with learning using Direct Instruction (DI).

The instrument used in this study is an argumentative essay writing test. The test is given twice, namely, the Pre-test before treatment and the Post-test after treatment. The test was assessed using an assessment rubric developed by Jacobs et al. (1981) in the study Nisa (2024), which assesses five key aspects: content, organization, vocabulary, language usage, and mechanics. This rubric was chosen because it has been widely used in writing research in various

English education contexts and has proven to be able to provide a comprehensive assessment. To keep the validity of the content, the research instruments were examined by two expert lecturers in the field of teaching writing. Moreover, there is reliability. The instrument is secured through the technique of Inter-rater reliability, where the results of student writing are assessed by two independent assessors to ensure the consistency of scores.

The treatment in this study lasted for four meetings. In the experimental group, learning was carried out by applying the stages of PjBL. Students were asked to choose topics that were relevant to daily life, then work in groups to discuss ideas, find information, and prepare a writing draft. Next, students wrote an argumentative essay draft, revised it based on input from teachers and peers, and finally presented their writing in front of the class. This process was in accordance with the concept put forward by Krajcik & Blumenfeld (2006), i.e., PjBL encourages active student involvement through research activities and tangible product creation. In this way, students not only learn to write to complete assignments, but also learn to relate language skills to the real-life situations they face.

On the other hand, the control group was taught using the DI method. In this learning, the teacher plays a dominant role by providing explanations of the structure of argumentative texts, providing text examples, and guiding students through a series of exercises. Students follow the teacher's directions systematically, starting from concept introduction, guided exercises, and independent exercises. According to Stockard et al. (2018), DI has proven to be effective in imparting knowledge directly and systematically, especially when the goal of learning is to provide a quick understanding of basic concepts. However, DI tends to limit students' active involvement in developing their own ideas.

The research data was analyzed through two stages. First, descriptive analysis was carried out to describe the development of students' writing skills in both groups. This analysis includes the calculation of the average score, highest score, lowest score, and standard deviation from the pre-test and post-test results. Second, to determine the significant difference in learning outcomes between the experimental group and the control group, an inferential statistical test in the form of an

independent sample t-test was used. This test was chosen because it is suitable for comparing the average of two different groups. If the results of the analysis show significant differences, it can be concluded that treatment in the form of the use of PjBL has a better effect than DI in improving students' argumentative writing skills.

RESULTS AND DISCUSSIONS

Description of Research Results

This research was carried out in class XI of SMA Muhammadiyah 1 Purwokerto by involving two classes as samples, namely class XI Merdeka 2 (29 students) as an experimental group with the application of Project-Based Learning (PjBL), and class XI Merdeka 5 (30 students) as a control group with the application of Direct Instruction (DI). Both groups first took a pre-test to find out their initial ability to write argumentatively.

Based on the results of the pre-test, it can be seen that the initial abilities of the two groups are relatively equal. After being treated for four meetings with different learning methods, students were again given a post-test to find out the development of their argumentative writing skills. The average results of the pre-test and post-test scores of the two groups can be seen in the following table:

Table 1. Pre-test and Post-test Results of Argumentative Writing Skills

Group	N	Average test	Pre- Post-test average	Increased
Experiment (PjBL)	30	60,76	71,00	10,24
Control (DI)	29	60,27	66,40	6,13

Description: N = number of students

Table 1 shows that both groups experienced an increase in scores from pre-test to post-test. However, the increase in the experimental group (10.24 points) was higher than in the control group (6.13 points). This indicates that the application of PjBL has more influence on improving argumentative writing skills than DI.

The difference in the development of the average score can be visualized in Figure 1.

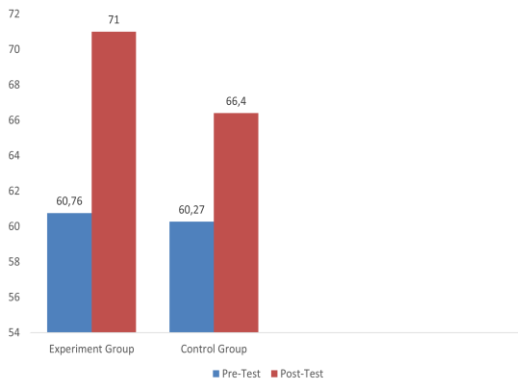


Figure 1. Comparison of Pre-test and Post-test Scores of the Experimental and Control Groups

The graph in Figure 1 shows that the initial scores of the two groups were relatively balanced. However, after treatment, the post-test scores of the experimental group increased more sharply than the control group. This confirms the effectiveness of PjBL in improving students' argumentative writing skills.

Analysis of Differences in Results

To test whether the difference is significant, an independent sample t-test is carried out on the post-test score. The results are shown in Table 2.

Table 2. Independent Sample t-test results

Variable	t-count	Df	Sig. (2-tailed)
Post-test Experiment vs. Control	3,001	57	0,004

Remarks: Sig. < 0.05 indicates a significant difference

The test results showed a significance value of $0.004 < 0.05$, which means that there was a significant difference between the experimental and control groups. Thus, it can be concluded that PjBL is more effective than DI in improving the argumentative writing skills of grade XI students of SMA Muhammadiyah 1 Purwokerto.

Discussions

The results of this study reinforce the previous finding that PjBL is able to improve the quality of students' writing because it actively involves them in the entire learning process. According to Dewi (2015), students' involvement in real projects helps them organize ideas more systematically. Wulandari & Ahmad (2020) also emphasized that PjBL encourages students to collaborate, share opinions, and produce more logical writing.

The findings of this study are also in line with Melti (2022) which shows that PjBL increases motivation to write and makes it easier for students to develop arguments. In the context of high school, Kristiana (2023) proving that PjBL is able to improve the quality of students' narrative writing through increased creativity and active engagement. Although the texts used are different, the pattern of PjBL success remains consistent, which is to provide a wider space for students to think critically and express ideas.

In addition, the results of this study confirm that DI still provides an increase, even though it is not significant. DI is effective in providing structure and explicit explanations of grammar or text patterns (Susilawati, 2021), but it encourages students to create independently. Therefore, a combination of PjBL and DI can be considered to provide a balance between teacher direction and student independence.

Visually, Table 1 and Figure 1 both show a clear developmental difference between the two groups, while Table 2 confirms that the difference is statistically significant. Thus, the results of this study confirm that PjBL is a relevant learning strategy to improve the argumentative writing skills of high school students, while supporting the demands of the 21st-century curriculum that emphasizes critical thinking, collaboration, and creativity skills (Wijayanti, 2025).

This study has several limitations that need to be considered. The study was conducted in only six meetings, so the results obtained cannot yet describe the long-term impact of the Project-Based Learning (PjBL) model on students' writing skills. In addition, the limited sample size, namely two classes with a total of 59 students, means that the results of this study cannot be generalized to a larger population. This study also focused only on argumentative writing skills, so it did not examine the influence of PjBL on other language skills such as speaking, reading, or listening. Therefore, further research is expected to be conducted over a longer period of time, involving more participants, and covering various types of language skills to obtain a more comprehensive picture of the effectiveness of project-based learning models.

Research Implications

This research provides practical implications for English teachers in secondary schools. First, the

implementation of PjBL can be a solution in overcoming students' low motivation to write. Second, PjBL encourages critical thinking and collaboration skills, so that they are in line with the needs of 21st-century competencies. Third, the results of this research can be the basis for schools to encourage teacher training in the implementation of PjBL. Fourth, the combination of PjBL and DI can be a balanced alternative, where DI is used to provide initial explanations, while PjBL is used to encourage the application of knowledge in the form of writing projects.

CONCLUSION

This study concludes that the application of Project-Based Learning (PjBL) is more effective than Direct Instruction (DI) in improving the argumentative writing skills of grade XI students of SMA Muhammadiyah 1 Purwokerto. The average score increase in the experimental group was higher than in the control group, and statistical tests showed significant differences. These results prove that project-based learning is able to facilitate students in developing writing skills that are not only limited to linguistic aspects, but also include the ability to think critically, collaborate, and formulate more logical and systematic arguments.

In addition, this study confirms that the PjBL method can be a solution to the problem of low student motivation in writing. By involving students in real and meaningful projects, they are encouraged to be more active in exploring ideas, conducting simple research, discussing, and producing written products. This is different from the DI method, which tends to place students in a passive position as a recipient of information, so that the improvement in writing skills that occurs is relatively more limited. Thus, PjBL not only has a positive impact on cognitive learning outcomes but also on the affective aspects of students, namely motivation, involvement, and confidence in writing.

SUGGESTION

Based on the results of the research that has been obtained, there are several suggestions that can be considered for the development of writing learning in schools. English teachers are advised to start applying PjBL in writing learning activities, especially on argumentative texts, as this model

has been proven to increase students' active participation, encourage collaboration, and strengthen their ability to organize ideas. Teachers can guide students at every stage of PjBL, starting from topic selection, information collection, drafting, to presentation of written results, so that students not only learn to write to fulfill assignments, but also to produce meaningful works. In addition, schools are expected to support the implementation of PjBL by providing adequate facilities and infrastructure, such as access to digital learning resources, discussion rooms, and presentation facilities that can support collaborative processes. Support from schools is very important so that the project-based learning process can take place well and provide maximum results. This research does focus on argumentative writing skills, so that the next researcher is expected to expand the study to other types of texts, such as narrative, descriptive, or expository, even on other language skills such as speaking and reading. Further research is also important to examine the influence of PjBL on students' affective aspects, such as motivation, attitude, or confidence in writing, so as to provide a more comprehensive picture of the benefits of PjBL in English language learning.

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