

## Project Based Learning: an Attempt to Develop Student's Academic Writing Skills

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### Abstract

This study aims to see the effectiveness of project based learning on the academic writing skills of STIE Dwi Sakti Baturaja students. The research method used in this study was a pre-experiment with a research design of One Group Pretest-Posttest Design. The sample of this study amounted to 60 students. The data collection technique used a test technique which was divided into pretest and posttest. The data processing technique used a t-test calculation with the SPSS 20 program. The results showed that project based learning was effective on students' academic writing skills. Furthermore, students who can improve their score at least 10 points better than the score they get from the initial test with a score above 90 there are 11 students. Furthermore, students who have a score of more than 78 there are 14 students. A total of 35 students got a minimum score of 78 after using PBL in their writing activities.

**Keywords:** project based learning (PBL); academic writing

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## INTRODUCTION

Good writing skills have an important role in a student's academic success, whether it's the task of writing a report, proposal, final project, or thesis. Writing skills are very important because they show a person's ability to express ideas, thoughts, knowledge, Ideas. According to McWhorter (Gustiani et al, 2021) many benefits are obtained by having writing skills: (1) being able to complete studies, (2) training students to learn and remember many things, (3) encouraging students to think clearly, and (4) strengthen problem solving skills. Furthermore, Langan (Toba et al, 2019) said that there are three benefits obtained by writing. First, writing helps someone become a better writer, for example, writing activities can be applied when writing exams, writing reports, writing thesis and even writing scientific papers. Second, discipline in writing will improve our abilities as readers and listeners. Third, writing makes a person a good thinker.

Every student must have the ability to write. Writing ability or academic writing ability is needed by students to achieve academic achievement (Oktarina et al, 2018). Students at the university or college level must be able to write well. It must be done to meet the objectives of learning to write for students. Bailey (Argawati, N. O., & Suryani, 2020) revealed that the purposes of writing are as follows: 1) to report what the author has done, 2) to answer the author's questions, 3) to provide the author's opinion, and 4) to synthesize research conducted by someone else. About one topic.

But in reality they still find it difficult to express their ideas. The results of initial observations of STIE Dwi Sakti Baturaja students showed that they had difficulties in writing. The first problem is that the paragraphs are incoherent and lack strong written arguments making it very difficult to convince the reader. This finding is also supported by research conducted by Evi (Gustiani et al, 2020). The study found that student report writing was related to linguistic aspects such as: mastery of English vocabulary, choice of words or diction, use of correct grammar, skills to compose paragraphs into writing that has cohesion and coherence. In addition, it was found that most of the students' English essays were poorly organized, inappropriate grammatical, without sentence structure, and weak in vocabulary use.

Learning to write is not a simple thing. Taylor said (Soffiany & Purbani, 2020) according to most people, writing activities is a very difficult task because they have to express new ideas using correct and good language. However, it is a challenging task for the teacher or tutor. Therefore, it can be said that students must master writing skills because it is considered a very important basic skill for every student (Puteh et al, 2010). Thus, in the process many students are trying to be able to write. There are many problems found that cause students to have difficulty in writing. These problems are lack of ideas, difficulty thinking of interesting or significant things or topics to write about, and inability to find words to use. These problems can be clearly observed among low-ability students. Van Weijen et al. (Graham, 2019) believes that writing becomes difficult because it uses many highly interactive cognitive activities at the same time. This cognitive activity is to make organized writing.

Based on the problems mentioned above, the writer suspects that one of the causes of the problem is the teacher's strategy in teaching writing. Facing these problems, teachers need to continue to look for several methods or approaches to apply them in teaching writing. It takes a strategy or learning model that suits the needs of students. In this study, the authors apply Project Based Learning (PBL) in teaching writing to improve students' academic writing skills. Project Based Learning (PBL) is a learning method that uses problems as the first step in collecting and integrating knowledge based on experience in real activities.

Project Based Learning (PBL) requires a comprehensive understanding of the teaching approach in which the learning environment is designed so that students can investigate and solve problems including deepening the material of a topic subject, and carrying out other tasks. This approach allows students to work independently in constructing it in the form of tangible products as stated by Habulembe (Gustiani et al, 2021). In PBL, students are given a complex task or project, quite difficult, complete, but realistic and then given sufficient assistance so that they can complete the task. In addition, the application of PBL encourages the growth of competence, independence, responsibility, confidence, critical and analytical thinking. Gokhan (Koleva et al., n.d.) stated that PBL has great potential to provide more interesting and meaningful learning for students.

Thomas (Rahman et al, 2021) stated that PBL is a strategy that regulates learning activities through assignments. Students will be required to solve problems, make decisions, and be able to work in groups. Students can report the results of their problem solving or project through a presentation or written report (Kurniawati, 2019). Furthermore, Alan and Stoller (Wang, 2020) stated that the learning process that maximizes language, learning content, and learning activities requires the responsibility of educators to implement the tasks given. Furthermore, according to Goodman and Stivers (Hastuti, 2022) PBL is teaching that involves students in real tasks related to real problems of everyday life.

From the explanation above we conclude that PBL assigns students to pour their ideas into persuasive essays into three ways, namely: describing the problem, identifying the problem and proposing a solution to this problem accompanied by examples so as to influence the reader in writing to do what is said. author or writers want. In this study, researchers combined project-based learning with the writing process. The writing process allows students to understand the process in their writing activities, provides sufficient time for students to write, and helps students to express what is on their mind as they write, focuses on revision, and encourages feedback from

both lecturers and students. peers (Brown, H. Douglas & Lee, 2015). The researcher believes that using PBL in the writing process has a good impact on students. By combining learning and PBL, students are able to learn to write on topics that are more meaningful and contextual, in a more organized way. Students are given the opportunity to plan, compile, revise, and edit their writing. The use of PBL and the writing process also makes students feel more confident in the writing process because they are collaborating with their peers.

## METHODS

This research method uses quasi-experimental research. The research design used in this study is a factorial design. This research was conducted on students at STIE Dwi Sakti Baturaja. Students will receive treatment for 8 meetings. The PBL model will be used in writing scientific articles. The number of subjects in this study were 60 students. In addition, researchers also prepared criteria for the success of implementing PBL in the writing process (Arihasta, D., & Basthomi, 2019).

**Table 1. Project Based Learning Success Criteria for Academic Writing Skills**

No.	Kriteria	Instrumen
1.	All students can improve their score by at least 10 points better than the score they got in the initial test	Writing Test
2.	The average value of students after implementing the strategy is equal to or more than 78	Writing Test
3.	At least 50% of students can pass the minimum pass (78)	Writing Test

Based on the table above, students who can improve their scores are at least 10 points better than the scores they obtained in the initial test with scores above 90, there are 11 students. Furthermore, students who have a score of more than 78 there are 14 students. A total of 35 students got a minimum score of 78 after using PBL in their writing activities.

## FINDING AND DISCUSSION

This section presents the quantitative results of this study and their interpretation. After presenting descriptive and inferential statistical data, this section continues to discuss these results in the theoretical framework adopted in the study and the results of previous studies.

### Pretest and Posttest Results of Academic Writing Using Project Based Learning

In the following, data which relate with initial and final tests of student academic writing are presented.

**Table 2. Average Pre-Test Score, Post-Test, and Gain Score**

Average Pre Test	Average Post Test	Gain Score
50,15	80,80	30,65

Based on the table above, the results of the categorization of academic writing learning before using PBL obtained an average of 50.15. This shows that students at the time of the pretest were in the low category. Furthermore, after using PBL, the average posttest was obtained at 80.80, which indicates an increase in the score.

### The Effect of Using Project Based Learning on Students' Academic Writing Ability

To determine the effect of using PBL on students' academic writing skills, it was analyzed using inferential statistics. Inferential statistical analysis using computer assistance with the SPSS 20 program. The results of this statistical analysis aim to answer the research hypotheses that have been formulated. Before performing statistical analysis, the normality test and homogeneity test were first carried out as a condition for conducting a t-test or hypothesis testing. The tests are as follows:

**Table 3. Normality Test**

Tests of Normality	Kolmogorov-Smirnova <sup>a</sup>			Shapiro-Wilk		
	Stat	Df	Sig.	Stat	Df	Sig.
nilai ujian	.121	60	.100*	.931	60	.054

\*. This is a lower bound of the true significance  
a. Lilliefors Significance Correction

Based on Table 3 above, it is known that the significance value (Sig.) is greater than 0.05, which is 0.100, while learning outcomes are said to follow a normally distributed population if the  $p\text{-value} > \alpha = 0.05$ . So it can be concluded that the value data is normally distributed.

**Table 4. Homogeneity Test**

Levene Statistic	df1	df2	Sig.
3.269	6	17	.025

Based on Table 4 above, it is known that the results of calculations and data processing carried out by the SPSS program obtained a significance value (Sig.)  $0.025 < 0.05$ , it can be concluded that the pretest and posttest samples are samples taught without using PBL and samples that are taught without using PBL. Taught using PBL have unequal or homogeneous variants.

After that the data obtained will be analyzed using the t test at a significance level of 95% ( $\alpha = 0.05$ ). Data management was carried out using the SPSS 20 computer program. The data used were final grades or posttest scores for academic writing. Here are the test results.

**Table 5. Paired Samples Test**

	Perbedaan Perbandingan					T	Df	Kemaknaan (pada 2 sisi)
	Rata-rata Simpangan Baku	Rata-rata Tingkat Kesalahan	Interval Perbedaan Pada Tingkat Kepercayaan 95% Terendah Tertinggi					
Nilai Akhir- Nilai Awal	14.55000	4.95745	1.10852	12.22984	16.87016	13.126	19	,000 (1,72472)

In the table above there are tcount and ttable. It is known that if tcount is greater than ttable, then there is a change between the final test and the initial test. On the other hand, if tcount is smaller than ttable, there is no change. Based on the data above, it is obtained that tcount is greater than ttable, namely  $13.126 > 1.724$ . Thus there are changes in the initial test and the final test.

### The Successful Use of Project Based Learning on Students' Academic Writing Ability

After learning to use PBL and completing the posttest, it was found that the success of using PBL on the following students' academic writing skills was obtained.

**Table 6. The Results of the Successful Use of Project Based Learning on Students' Academic Writing Ability**

No.	Kriteria	Students
1.	All students can improve their score by at least 10 points better than the score they got in the initial test	11
2.	The average value of students after implementing the strategy is equal to or more than 78	14
3.	At least 50% of students can pass the minimum pass (78)	35

Based on the table above, students who can improve their scores are at least 10 points better than the scores they obtained in the initial test with scores above 90, there are 11 students. Furthermore, students who have a score of more than 78 there are 14 students. A total of 35 students got a minimum score of 78 after using PBL in their writing activities.

The results of this study indicate that there is a significant difference between teaching writing scientific articles using PBL and teaching writing scientific articles using direct or conventional instructions. PBL is more effective than conventional for teaching writing because the average score of students taught using PBL is higher than those taught without using PBL.

By using PBL, students can explore their ideas in doing scientific article writing projects. Students have many opportunities to solve problems that will be poured into scientific articles. In addition, students also have extra time to discuss with their friends in doing assignments and feel free to express their ideas and innovations. Barell (Strevy, 2014) argues that PBL is now seen by many educators as the best approach to use in learning.

From the results of research that has been carried out for six meetings using pre-test and post-test as a measuring tool for the success of writing student scientific articles. This pre-test activity was carried out with the aim of collecting initial information about students' abilities in writing scientific articles. The results of the pre-test activity obtained several findings, namely (1) almost all respondents found it difficult when they started writing. Students take 15-25 minutes to imagine, think about what points will be written; (2) only 40% of respondents started writing an essay by making an outline of the essay/important points; (3) almost 90% of respondents write directly without thinking about the outline, plot or important points; (4) The majority of respondents often make mistakes in choosing the right words in sentences; (5) 60% of respondents do not use conjunctions so that there is a lack of coherence between sentences.

From the findings made at the beginning of the activity before the experiment, it can be concluded that students still cannot develop story ideas if they are not stimulated by brainstorming activities or activities that support writing. Without this, students' ideas and creativity are hampered. The average writing results obtained at the beginning before the experimental activity, within 1 hour which has been determined the most respondents produce at most 5 paragraphs in the introduction, 6 paragraphs in the discussion section, and 1 paragraph in the conclusion section. This is because the majority of students always write what they have in mind without making an outline or points first. This will result in running out of ideas or lack of coherence between paragraphs. These shortcomings can be seen from the results of student writing who are weak in using conjunctions and choosing the right words according to the theme.

Based on this, experimental activities were carried out using the PBL learning model for six meetings. After the experimental activities, post-test activities were carried out which aimed to measure and compare student learning outcomes in their writing skills. The results obtained from the end of this activity are (1) the writings of each respondent develop; (2) respondent's writing is more focused if the steps in PBL activities are carried out; (3) the results of the writing are more beautiful, because they are displayed with pictures and decorations that match the theme. Based on the results of the final test, it can be concluded that student writing can develop well when stimulated by a project theme that they are interested in, so that the ideas and contents of the essay develop and are directed. Then seen from the writing or the choice of words used varied and in accordance with the given theme. In addition, to clarify the content of their writing, students use pictures and decorations that match the theme. When comparing the results of the pre-test and post-test, it can be shown that both content, sentences and writing as a whole developed as much as 60%. These results were obtained from the average score of students' writing in the pre-test and post-test activities. Although still around 60% of students find it difficult to carry out these project activities, but with activities carried out in groups, the problems experienced can be resolved.

So it can be concluded that PBL is very influential on students' academic writing skills. This is evidenced by the obtained average value of student learning outcomes increased during the posttest as much as 30.65. This can be interpreted, that when students use the PBL learning model,

the student learning outcomes obtained are higher than when students use conventional learning. This shows that the learning model has an influence on learning outcomes. But apart from that, it is necessary to consider the selection of learning models based on student characteristics, student backgrounds and the number of students. So that the learning model used can be effective, efficient, and affect student learning outcomes.

After conducting research at STIE Dwi Sakti Baturaja, it can be concluded that PBL is very influential on the results of students' academic writing and can increase students' enthusiasm for learning.

## CONCLUSION

The results of the research and discussion concluded that Project Based Learning (PBL) had an effect on students' academic writing skills. This is indicated by the t-test conducted on the results of the post-test conducted on students. Based on the results of inferential statistical analysis using the SPSS version 20 computer program, the data showed that the significance value (1-tailed) was  $0,000 < 0.05$ . This shows that there is a significant difference between the initial variable and the final variable. Based on this, it is stated that there is a significant effect of using PBL on the academic writing ability of STIE Dwi Sakti Baturaja Management students.

Based on the results of the study and the conclusions above, the suggestions that can be conveyed in this study are as follows. First, Indonesian lecturers are advised to use a project-based learning model in academic writing activities. In addition, lecturers can develop academic writing teaching materials by implementing PBL in them.

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