

THE EFFECT OF PROBLEM BASED LEARNING (PBL) ON STUDENT'S WRITING SKILL OF THE ELEVENTH GRADE

Nandito Tampubolon¹, Mungkap M. Siahaan², Novra Melisa P. Hutabarat³

^{1,2,3}English Education Department, Faculty Of Teacher Training And Education Universitas HKBP Nommensen Pematangsiantar Pematangsiantar, Indonesia

Corresponden E-Mail; ditotampubolon3@gmail.com

Abstract

Mastery of writing skills is very important. However, many students experience difficulties and challenges in improving their writing skills. This study was used to determine the effect of implementing the Problem Based Learning (PBL) model on the writing skills of class XI students of SMK Swasta GKPI 1 Pematangsiantar using a quantitative approach with a quasi-experimental design. This study took samples using a purposive sampling technique involving 60 students who were divided into 2 groups, namely the experimental group (XI TKJ A) which consisted of 30 students, and the control group (X TKJ B) which also consisted of 30 students. In this study, the experimental class received treatment using the Problem Based Learning (PBL) model and the control class with conventional methods. In this study, data were collected with pre-test and post-test and analyzed using an independent sample t-test where in the experimental class the mean pre-test value was 40,67 and post-test was 75, while the mean value in the control class on the pre-test was 35,33 and post-test was 50. After being tested using the t-test, a significance value (2-tailed) of $0.000 < 0.05$ was obtained, so the Null Hypothesis (H_0) was rejected and the Alternative Hypothesis (H_a) was accepted. This means that there was a significant increase in students in the experimental class who were given treatment. So, this shows a significant difference between the experimental class and the control class. Based on the research findings, it was concluded that the Problem Based Learning (PBL) model can significantly improve students' writing skills, especially in writing analytical texts with correct organization.

Keywords: Problem Based Learning; Analytical Text; Writing Skill; Quasi- Experimental Research

INTRODUCTION

As a means of communication, mastery of English cannot be separated from four main language skills, namely listening, speaking, writing, and reading. These four aspects are interrelated and cannot be separated because they have a relationship or a unity that cannot be separated because skills in language cannot be obtained by only one aspect. However, this study focuses on writing aspect. The writing aspect is one of the language components where the delivery of information is carried out in a writing by ensuring that the information provided is with the right structure so that the information has the right cohesion and coherence so that readers can easily receive and understand the message conveyed through a writing. According to Sholeh et al. (Wabula, Papilaya, & Rumahlatu, 2020) writing is a productive and expressive activity because the writer can convey ideas, ideas, opinions, thoughts, feelings in writing and improve intelligence, developing creativity, growing courage, stimulating the purpose, and gathering information. This means that writing is one aspect of ability that can encourage students to become more productive and creative in producing texts by expressing their ideas, thoughts, and opinions in written works, which also serve as a form of communication or interaction with others. According to Brown as cited by Siahaan, et al. (Liu & Pásztor, 2022)

there are 5 components in writing as: content, organization, vocabulary, structure, and mechanics.

In this research, the writing aspect is focus on is the organization of the text created with structured and coherence paragraph, thus focusing on students' writing skill. Saleh Abbas (Nurochman & Diniya, 2022) as cited by Ratnaya & Husni states that writing skills are the ability to express ideas, opinions, and feelings to other parties through written language. In conveying ideas, opinions or information through a text, proper writing skills are very important so as not to cause confusion to the readers. In writing, the structure as well as the cohesion and coherence of each paragraph is very important because it will greatly affect the reader's understanding of the writing information being read. Text that has the right structure as well as the correct cohesion and coherence will make it very easy for readers to receive and understand the message conveyed through writing because each paragraph read is interconnected. Besides, there are several texts in English such as recount, descriptive, analytical, report, etc. This research will focus on analytical text which is a text that aims to convey the author's opinion on an issue or problem by providing arguments that can support her statement so that it can convince her readers. Therefore, the text created by the writer must be structured and coherent so that the reader is convinced and feels that the writer's opinion is logic (Fauzia, 2018).

In English learning activities, students often encounter situations where the text they read is unstructured and not in the order it should be. The factor that causes this situation to occur is because students have difficulty in understanding the difference between opening and closing paragraphs. In addition, students also often experience difficulties in vocabulary limitations so that in creating texts, students find it difficult to find and adjust the right connecting words to make each of the paragraph coherent. This causes the argument text of the analytical text created cannot convince the reader because each paragraph is not written randomly or out of sequence so that the argument given becomes illogical.

Based on the researcher's experience during conducting the internship program (PPL) at SMK Swasta GKPI 1 Pematangsiantar during October 2024 until January 2025, many students have some difficulties in writing analytical text, especially in writing analytical texts. The first problem is, students find it difficult to know what is the difference between the opening paragraph (thesis) and the closing paragraph (reiteration) (Pratiwi & Wuryandani, 2020). Students only understand the difference in the position of thesis and reiteration, while the difference in function and content are not. For example, the statement "social media has a huge influence on the mental development of adolescents", will be written exactly the same by students in the thesis section and also reiteration without any addition to the reiteration section. In fact, reiteration functions to reaffirm the statement in the thesis section while summarizing the arguments presented without providing new information or arguments. The second is that students experience difficulties due to limited vocabulary so that students find it difficult to add the right words, especially the right conjunctions in each paragraph. This causes the text written by students to be incoherent because the conjunctions used are not appropriate and make each paragraph discontinuous.

Students' difficulties in writing analytical text are possibly caused by inappropriate learning strategies used in the learning process, making the learning process less efficient. Researcher found that students' scores in writing skills were very low and consistently below

the minimum passing score, with an average score of 47,40. Therefore, in this case, the right strategy to use in the learning process is the problem-based learning (PBL) strategy, which can help students to be more creative in writing. Therefore, the role of the teacher as an important factor and the main facilitator for students during learning is very important to guide and direct students. Siahaan, et al. (SAPTENNO, Audrey, TUAPUTTY, RUMAHLATU, & PAPILAYA, 2019) stated that teachers have the responsibility of initiating, encouraging, guiding, equipping and collaborating so that their students are active and skilled in critical thinking and creating enjoyable learning, then teachers are also responsible for observing, analyzing and associating in accordance with the syntax of their learning methods and strategies which aim to help the process of developing student knowledge. It is intended that problem-based learning strategies are very helpful and involve closer direct interaction between teachers and students to do problem solving on the essential concepts of the problems given so that students can solve problems critically through the guidance provided by the teacher. According to Hairuddin, et al. (Safitri, Hadi, & Widiasih, 2023) in their study entitled "The Use of Problem Based Learning (PBL) Method in Teaching English Writing", students often do not write down the main points and ideas for their writing, students have difficulty summarizing their writing briefly and only rewrite the previous paragraph, and students also often make mistakes in terms of writing organization and grammar in their texts because students directly translate Indonesian texts into English so that mistakes often occur which result in the resulting text being less accurate. This research shows that the lack of student interest in learning can be caused by inappropriate learning strategies. In this case, the right strategy is needed to be able to increase student interest in learning English so that it can overcome students' difficulties in writing organization and their limited vocabulary. Therefore, one strategy that can help with these difficulties is Problem Based Learning (PBL). Tri Gusrita (Anggraini, Nazip, Amizera, & Destiansari, 2022) also in her research entitled "Penerapan Model Pembelajaran Berbasis Masalah untuk Meningkatkan Keterampilan Menulis Teks Eksposisi Siswa MAN 1 Sarolangun", states that students have difficulties in writing analytical texts. The low writing skills and student motivation in writing analytical texts are caused by the inaccurate learning process that is carried out because it emphasizes more on theoretical aspects, thinking power, student experience and there is no emphasis on increasing motivation in students (Aslam, Suparji, & Rijanto, 2021). This research shows that the right strategy is needed to increase students' motivation in writing, which is a problem-based learning strategy with classroom action research (Nazara & Dewi, 2023).

To overcome the problems above, the Problem Based Learning (PBL) strategy can be used as a learning strategy that can help students' difficulties in terms of text organization. In many studies, PBL has been proven effective for students' difficulties in writing skills on various types of texts, and one of them is analytical text (Nababan, Maria Marbun, Sihombing, Matematika, & Keguruan Dan, 2024). The PBL strategy is also effective in helping students add new vocabularies because of the independence of students in writing which attracts students to think creatively. This study aims to overcome these problems by investigating the PBL strategy on the ability to write analytical texts in SMK Swasta GKPI 1 Pematangsiantar students.

Based on the phenomena above, the researcher is interest in conducting research with the title "The Effect of Problem Based Learning (PBL) on Student's Writing Skill of The Eleventh Grade at SMK Swasta GKPI 1 Pematangsiantar".

METHOD

In this research, the method used quantitative research method. Quantitative method is a type of research that involved researcher to collect numerical data and statistical analysis to test hypotheses, identify relationships between variables and answer questions in research so as to draw conclusions. Mohajan (Hamdani, Nurhafsah, & Rustini, 2022) stated that quantitative research methods deal with numbers and anything those are measurable in a systematic way of investigation of phenomena and their relationships. The aim of this method was to generalize the results obtained from a larger sample population.

In this research, a quasi-experimental method used to measure the effect of certain intervention on the dependent variable. According to Hasanah, et al. experimental research is research that determines the effect of one variable on another variable under strict control. According to Napitupulu S, et al. (Pebriyani & Pahlevi, 2020) quasi-experiment means to compare group between a control group and experimental group where both group is compared.

In the quasi-experimental method, the type of design used by the researcher in this research was a non-equivalent control group design where subjects were selected by the researcher based on several considerations. In addition, this design involved two groups, namely experimental and control groups to conduct a pre-test before treatment and post-test after treatment to determine the comparison of results after treatment using an independent t-test. The experimental group was given treatment, namely learning using the PBL model, while the control class was not given treatment but conventional learning. This research design was chosen because it maked it easier for the researcher to conduct the research without having to randomize the sample (Simangunsong, 2023).

This research conducted at SMK Swasta GKPI 1 Pematangsiantar, Siantar Marimbun District, North Sumatra Province. Jl. D.I. Panjaitan No. 47, Pematangsiantar City. This location was chosen because of the research related with the researcher internship program experience. There the students were still difficult in understanding the structure of analytical texts because of limitations of English vocabularies. In addition, the school still needed to improve and adjust learning strategies to suit the needs of the students.

Population is all objects that are the target of a study where these objects have the same characteristics. Meanwhile, a sample is a portion of the population selected to be a source of data in a study to represent the entire population so that the research becomes more practical and efficient. Therefore, population and sample are two fundamental concepts that are central to drawing valid and generalizable conclusions or providing in-depth understanding.

The population in the research was the eleventh-grade students of SMK Swasta GKPI 1 Pematangsiantar in 2025/2026 academic year. The population of this research were all grade XI of SMK Swasta GKPI 1 Pematangsiantar as many as 8 classes consisting of 5 majors. The decision of selecting the grade XI population class become the researcher population was linked

to researcher population within the Internship Program (PPL) (Abdullah, Kasim, & Marhaban, 2021).

The sampling technique is a way to choose the sample that will be utilized in the study (Hanafiawi et al, 2020, p.58). There are 2 categories of sampling method, namely probability sampling and non-probability sampling. In this research, the researcher used a non-probability sampling techniques, namely purposive sampling techniques where researcher select the samples based on several criteria that have been considered by researcher (Rao, 2019). The researcher chose class XI TKJ-A as the experimental class and class XI TKJ-B as the control class because class XI TKJ-A had lower English writing scores than class XI TKJ-B to answer the questions of analytical text. In this case, class XI TKJ-A got treatment for 2 meetings using PBL learning model, while class XI TKJ-B did not get treatment. The number of samples were class XI TKJ-A totaling 30 students and class XI TKJ-B totaling 30 students, so the total sample in this research were 60 students (Kusumawati, Supeno, & Lesmono, 2020).

In this research, the researcher used a test as an instrument to obtain the data. The writing test used was divided into two, namely pre-test and post-test. Both writing tests involved the subjects to write analytical texts with a predetermined maximum number of words and according to the topic that given by the teacher through posters used as media (Sagita, Jamaliah, & Rahimi, 2008).

The use of pre-test and post-test in this research allows the researcher to compare the students' learning outcomes before and after the treatment, so that the researcher can ensure the analysis of the effect of using Problem Based Learning (PBL) strategy on students' writing ability especially in analytical text.

RESULT AND DISCUSSION

Data Analysis of the Research

Data analysis of the research is a technique used in the research to process collected data so that researcher can measure and explain the relationships between variables. In this research, the researcher collected data through pre-tests and post-tests in the experimental and control classes. Researcher calculated measures of central tendency on the raw data, such as the mean, median, as well as measures of data dispersion, such as standard deviation and variance.

Data Description

This section discussed the pretest and the post-test statistical data for both the experimental and control classes. The pretest and post-test were given to students specifically to assess their ability to write in English, especially analytical texts. The tests were conducted in two classes to determine the comparative impact of the learning methods used by the researcher, namely the Problem-Based Learning (PBL) method in the experimental class and the conventional (traditional learning) method in the control class, also using a quasi-experimental approach as mentioned earlier (Ratnasari, 2017).

Treatment Description

Based on research conducted in grades XI TKJ A & B at SMK Swasta GKPI 1 Pematangsiantar, students have poor writing skills, so a learning model that is supportive and different from the usual classroom activities is needed. In this research, the population used

were grade XI students at SMK Swasta GKPI 1 Pematangsiantar, Siantar Marimbun District, North Sumatra Province. Jl. D.I. Panjaitan No. 47, Pematangsiantar City (Rossa, Maulidiah, & Aryni, 2021). The sample used in this research consisted of two classes with a total of 60 students, each class consisting of 30 students. These two classes were experimental class using the Problem-Based Learning (PBL) learning model, and control class that did not receive any treatment.

1. Experimental Class

The experimental class received treatment using Problem Based Learning (PBL). However, before giving treatment to the experimental class, the researcher first gave a pre-test to students during the eighth lesson on September 2nd, 2025. Students were given a written test as a pre-test and were given instructions before starting the test. After that, during the ninth to tenth lessons, the researcher conducted learning activities by providing treatment in the form of Problem Based Learning (PBL). After that, on September 9th, 2025, the researcher continued the treatment during the eighth to ninth lessons and gave a post-test during the tenth lesson. The research in the experimental class provided treatment using Problem Based Learning (PBL) in 2 meetings with a total of 6 lessons.

2. Control Class

In the control class, the researcher did not provide treatment to students as the researcher did in the experimental class, which was to conduct learning using Problem Based Learning (PBL), but instead continued to conduct learning in a traditional or conventional manner. However, before conducting learning activities, the researcher first gave a pre-test to students in the control class on September 2nd, 2025, during the first lesson. The test administered was the same as the one given by the researcher in the experimental class (Imran, 2022). Then, the researcher began the learning activity in the second to third periods by teaching based on textbooks and lectures, after which the students listened and took notes. Then, the researcher continued the learning activity in the first to second periods and administered a post-test to obtain data on the control class in the third period on September 9th, 2025. September 2025. The test administered was the same as the one given by the researcher to the experimental class, and instructions were given to the students before they began the post-test.

The Analysis of the Data

To assess whether the sample used was representative or not, and to ensure that the data was normally distributed, researcher used a normality test. In the normality test, the Kolmogorov-Smirnov method is applied to verify the normality of the data in this research. The assumption in this normality test was the data is normally distributed if H_0 is rejected and H_1 is accepted, and the normality value calculated based on the data exceeds or is greater than the significance limit of 0.05.

Independent Sample T-Test

Independent sample t-test is a test conducted to determine whether there is a significant comparison between 2 different and unrelated samples. The following table shows the results of the independent sample t-test:

Table 1. Independent sample T-test

Independent Samples 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
Husna/Experiment	Equal variances assumed	1.231	.272	11.733	58	.000	-25.888	2.135	-28.736	-24.285
	Equal variances not assumed			11.733	54.829	.000	-25.938	2.131	-28.738	-24.278

In Table 4.12 above, the significance value (two tails) was 0.000. This value means that $0.000 < 0.05$, so H1 is rejected and H0 is rejected and H1: $\mu_1 \neq \mu_2$, which means that there is a very significant difference after the treatment was given to the experimental class using the Problem-Based Learning (PBL) model. Based on this, it was concluded that the Problem Based Learning (PBL) model can improve the writing skills of students in class XI TKJ A at SMK Swasta GKPI 1 Pematangsiantar.

Research Findings

Based on the data analysis conducted by the researcher, this research concludes that the Problem Based Learning (PBL) model had a significant effect on the writing skills of class XI students at SMK Swasta GKPI 1 Pematangsiantar, especially in writing well-structured analytical texts (Husna & Multazim, 2019).

The graph above shows that there was a difference in the improvement of students' writing skills, as indicated by the difference in student scores on the pre-test and post-test in the experimental class. The graph shows that the lowest score on the pre-test was 20 and the highest was 60. Meanwhile, on the post-test, the lowest score was 65 and the highest was 85. The increase in students' writing skills in the experimental class was very significant. This improvement occurred due to the implementation of the Problem Based Learning (PBL) model in the experimental class by the researcher.

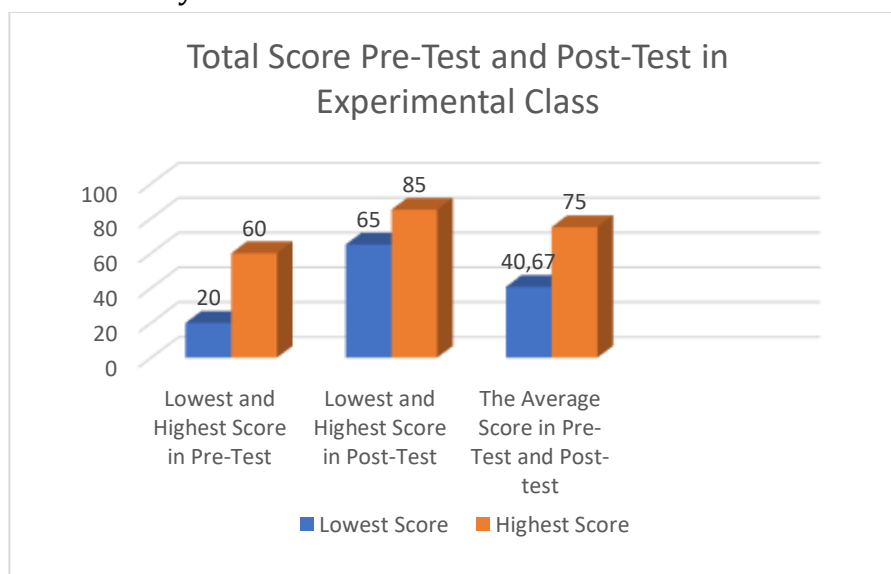


Figure 1. Total Score in Experimental Class

Figure below shows a graph of the lowest and highest scores of students in the control class. The lowest score on the pre-test was 20 and the highest was 50. Meanwhile, on the post-test, the lowest score was 35 and the highest was 65. This graph shows an increase in students' writing scores, but it was not as significant as in the experimental class, which was given treatment using a different learning model.

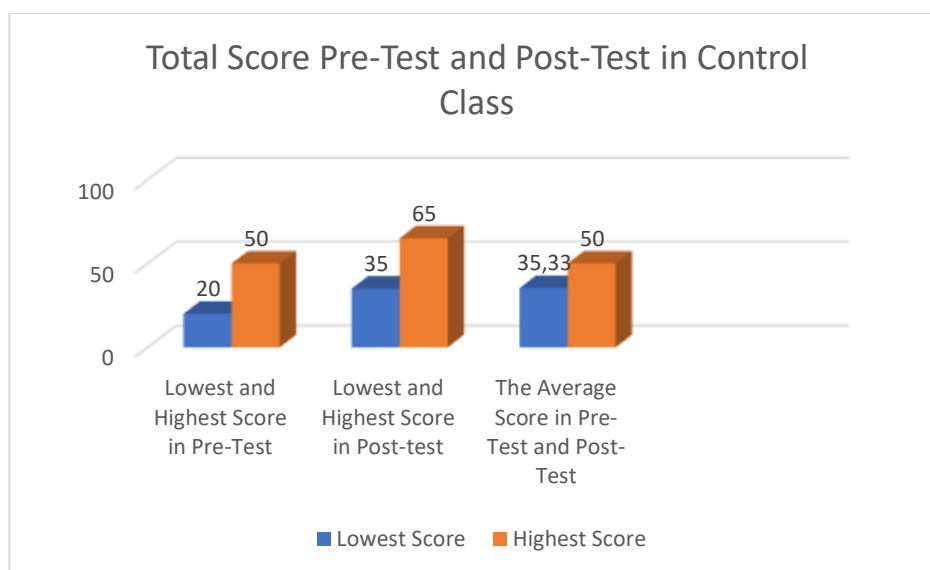


Figure 2. Total Score in Control Class

The two graphs above show a comparison of student scores in the experimental and control classes, proving that the Problem Based Learning (PBL) model can significantly improve students' writing skills. This means that there was a considerable difference between the experimental class, which used the Problem-Based Learning (PBL) model, and the control class, which used conventional learning methods. Therefore, it can be concluded that the Problem-Based Learning (PBL) model had an effect on improving the writing skills of students in class XI at SMK Swasta GKPI 1 Pematangsiantar.

Discussion

After conducting the research, analyzing data and conducting normality, homogeneity and hypothesis tests, the main objective of this research was to improve the writing skills of class XI students at SMK Swasta GKPI 1 Pematangsiantar by using the Problem Based Learning (PBL) learning model. The aims of this research are to find out whether the Problem Based Learning (PBL) learning model can affect students' writing skills and how the PBL learning model provides learning motivation to class XI students at SMK Swasta GKPI 1 Pematangsiantar (Auriana, Nuraida, & Oktaviana, 2021).

The sample selected by the researcher was a recommendation from an English teacher at SMK Swasta GKPI 1 Pematangsiantar where class XI TKJ A with 30 students was the experimental class and also XI TKJ B with 30 students was the control class. This sample was also based on the researcher's experience when conducting the internship program (PPL) at SMK Swap GKPI 1 Pematangsiantar, where the ability and motivation of students in writing in class XI students were very low, making it difficult for students to write English texts with the correct structure. Students were more accustomed to monotonous learning with conventional learning, namely by listening to the teacher teach and taking notes. As a result, there was no increase in students' ability and motivation in writing.

This motivated researcher to implement the Problem-Based Learning (PBL) model for the eleventh-grade students at SMK Swasta GKPI 1 Pematangsiantar (Chung, Chen, & Olson, 2021). This learning model encourages students to think critically and collaborate in groups to solve given problems. By implementing this learning model, students were better able to express

their thoughts in writing and increase their motivation to write (Lesnussa, Hanapi, Bugis, & Handayani, 2018).

The average pre-test score in the experimental and control classes shows that the two classes sampled in this research have an average that was not much different, where the average pre-test score in the experimental class was 40,67 and in the control class was 35,33. This means that both classes have the same initial abilities, so that the researcher can conduct the research to make comparisons by providing treatment using the Problem Based Learning (PBL) learning model in the experimental class and conventional learning in the control class, then giving a post-test. From the results of the research, the experimental post-test score was 75 and the control 50 . The increase in the post-test score shows that the class given treatment using the Problem Based Learning (PBL) learning model experienced a much greater increase compared to the class that implemented conventional learning. From the results of this research, it was concluded that the Problem Based Learning (PBL) learning model had an effect on improving the writing skills of class XI students at SMK Swasta GKPI 1 Pematangsiantar (Hidayati, 2018).

In improving the writing skills of grade XI students at S (Imelda, Cahyono, & Astuti, 2019) MK Swasta GKPI 1 Pematangsiantar, the researcher used the Problem Based Learning (PBL) learning model by focusing on students' abilities in writing texts with proper organization. Based on the results of research that had been carried out by applying the Problem Based Learning (PBL) learning model, an increase of 34,33 was found. So, through this model, students were able to think more critically to write what they want to write and increase students' motivation to write (Sari Togero & Usman, 2024).

Therefore, based on the results of this research and several previous studies, it was proven that implementing the Problem-Based Learning model is an effective strategy for improving students' writing skills. With this learning model, students can work in groups and collaborate with their peers. The teacher also acts as a facilitator, leading the learning process, supervising and guiding students during discussions (Risan & G, 2019). Therefore, when students encounter difficulties during the learning process, the teacher can quickly recognize and assist in resolving them.

CONCLUSION

Based on the data analysis and research findings in the previous chapter, it was concluded that the implementation of the Problem Based Learning model had a significant effect on students' writing skills and increased their motivation to write. The statistical results in the experimental class with an average post-test score of 75 showed a more significant improvement compared to the control class using conventional learning with an average post-test score of 50.

In the experimental class, the lowest score in the pre-test was 20 and the highest score was 60 with an average score of 40.67, and in the post-test the lowest score was 65 and the highest score was 85 with an average score of 75. It can be seen that there was a very significant increase after being given treatment in the form of Problem Based Learning (PBL) in the experimental class with an average score of 34.36. While in the pre-test in the control class, the lowest score was 20 and the highest was 50 with an average score of 35.33, and the lowest score in the post-test was 35 and the highest was 65 with an average score of 50. In the control class,

the average score of the increase found was only 14.67. This shows that there was an increase in both classes, but the one that experienced a very significant increase was in the experimental class where the class was given the Problem Based Learning (PBL) treatment.

This shows that the Problem Based Learning (PBL) learning model was appropriate for improving students' writing skills. The significance value (2-tailed) which shows that H_0 is rejected means that the Problem Based Learning model can improve the writing skills of class XI students at SMK Swasta GKPI 1 Pematangsiantar because of the observation that there was a difference between the results of the experimental class that was given treatment and the results of the control class that used conventional methods.

This was supported by the students' enthusiasm and active participation during the learning process using the Problem-Based Learning (PBL) model. This model trains students to collaborate in solving problems. Therefore, this model was highly engaging and had a significant impact on students' writing skills, making them more active, interactive, and creative, as well as motivated to write and express their ideas and creativity in writing.

Suggestion

Based on the researcher's experience during the internship program (PPL) at SMK Swasta GKPI 1 Pematangsiantar, several issues related to students' writing skills were identified. Therefore, the suggestions in this research were specifically aimed at addressing these issues.

1. Using appropriate learning models to train students' writing skills. English teachers are advised to utilize appropriate learning models as learning strategies that can attract students' interest, especially since many students lack motivation to write, resulting in many students being unable to write texts with proper organization.
2. Encourage students to be more active and collaborative. Teachers are advised to encourage students to be more active by collaborating in teams when using the Problem-Based Learning (PBL) model so that students' writing skills can develop through group discussions.
3. Other researchers are encouraged to explore and examine the Problem-Based Learning (PBL) model. Other researchers are encouraged to explore and examine the Problem-Based Learning (PBL) model, either at the same level or at different levels and contexts. They can also examine this model with different sample sizes to analyze the impact of its implementation

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