

## **Pengaruh Implementasi Problem-Based Learning terhadap Pembelajaran Procedural Text dan Berpikir Kritis di Kelas VIII SMP Nusantara Palangka Raya**

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### **Abstrak**

*Masalah siswa kelas VIII SMP adalah kurangnya kemampuan menulis teks prosedur dan berpikir kritis. Tujuan penelitian adalah untuk meningkatkan pemahaman teks prosedur melalui penerapan model PBL dan meningkatkan kemampuan berpikir kritis siswa kelas VIII SMP Nusantara Palangka Raya.*

*Penelitian ini menggunakan desain pre-test-treatment-post-test yang melibatkan sepuluh orang siswa SMP kelas VIII yang dipilih melalui metode purposive sampling. Instrumen yang digunakan untuk mengumpulkan data adalah wawancara, angket, dan tes. Analisis data menggunakan analisis uji-t sampel berpasangan.*

*Hasil penelitian menunjukkan bahwa terdapat peningkatan pemahaman teks prosedur dan berpikir kritis melalui penerapan model Problem Based Learning siswa kelas VIII SMP Nusantara Palangka Raya pada taraf signifikan 0,05. Oleh karena itu, penelitian ini merekomendasikan penerapan Pembelajaran Berbasis Masalah untuk meningkatkan kinerja dan kemampuan berpikir kritis siswa.*

**Kata kunci:** pembelajaran berbasis masalah, teks prosedur, berpikir kritis

### ***The Effect of Implementing Problem-Based Learning on Learning Procedural Text and Critical Thinking in Grade VIII SMP Nusantara Palangka Raya***

### **Abstract**

*The innovative learning model Problem-Based Learning (PBL) will be applied to overcome the problems faced by students of class VIII, SMP Nusantara Palangka Raya. The problem is the lack of ability to write procedural text and critical thinking. The aim of the study is to improve the*

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*understanding of procedural texts through the application of the PBL model and improve the critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya.*

*This research is an experiment with a pre-test-treatment-post-test design. The samples of ten students were selected through a purposive sampling method. The instruments used to collect data are interviews, questionnaires, and tests. Data analysis using paired-samples t-test analysis.*

*The result shows that there is an increase in the understanding of procedural texts through the application of the Problem-Based Learning model and the critical thinking skills of grade VIII students of SMP Nusantara Palangka Raya at a significant level of 0,05. Therefore, this study recommends the application of PBL to improve students' performance and critical thinking skills.*

**Keywords:** problem-based learning, procedural text, critical thinking

English is the main language in international communication and world relations. The increasingly flat world with the development of information and communication technology causes relationships to be no longer limited by national boundaries. The 2013 curriculum recognizes the important role of English. The 2013 curriculum is designed to meet the 21<sup>st</sup>-century learning model. In it, there is a shift in learning from students being told to students finding out from various learning sources beyond the boundaries of teachers and education units. The role of English in such a learning model becomes very central considering that more learning resources use English than other languages.

As a teacher who serves in the 21st century, of course, you will face rapid changes in the world of education due to technological developments. With regard to the 21st century, there are many innovative learning models, one of which is Problem Based Learning. Problem Based Learning is usually abbreviated as PBL or can also be called problem-based learning. PBL is a problem-based learning model and trains students to think critically (Barret, 2017; Pujiriyanto, 2019; Trianto, 2019). PBL is a learning model that integrates knowledge and technology. This model is an innovative learning model that is often used to overcome the problems faced by students in learning.

In Bloom's Taxonomy, the cognitive domains that are considered in the definition of critical thinking are analysis (C4), evaluation (C5), and creation (C6) (Sugiyono, 2017). The following is an example of the application of the critical thinking domain in the PBL model to improve understanding of the procedural text: (C4) Able to analyze social functions,

grammatical features, and generic structure of the procedural text, (C5) Able to evaluate the social function, grammatical features and generic structure of the procedural text, and (C6) Able to write procedural text.

The learning steps in the PBL model are as follows (Rusman, 2016).

**Table 1. PBL model learning steps**

| Step | Indicator  | Teacher behavior   |
|------|--|--|
| 1    | Student orientation on the problem               | Explain learning objectives and motivate students to engage in problem-solving activities.   |
| 2    | Organizing students to learn                     | Helping students identify and organize learning activities related to the problem.   |
| 3    | Guiding individual/group experiences             | Encourage students to collect appropriate information to get explanations and problem-solving.   |
| 4    | Develop and present works                        | Helping students in designing and preparing appropriate works such as reports, and helping them to share assignments with their friends. |
| 5    | Analyze and evaluate the problem-solving process | Helping students to reflect or evaluate their investigations and the processes they use.   |

Based on the results of pre-observation interviews conducted by the research team on May 17, 2021 at the research location, SMP Nusantara Palangka Raya, various problems were found as follows. 1) Based on information from the English teacher class VIII, students have difficulty writing the procedure text which results in their average score being below the KKM (Minimum Completeness Criteria), which is  $60 < 75$  (mean score 60 and KKM score = 75) the student's average score is below the KKM. 2) Teachers have difficulty in determining the right learning model to teach procedural texts to students. 3) Teachers still find it difficult to improve students' critical thinking skills.

The writing skill in the eighth grade includes composing a short and simple text that involves the act of giving the order, in which the writer gives the order in the form of steps of action that the reader needs to take. The students, during observation, had a difficulty in forming imperative sentences. Thus, it was determined that procedure text can be used to teach them to write simple imperative sentences.

The learning indicator aimed to be achieved was “writing simple written texts that involve the actions of giving the order, by paying attention to social functions, text structures, and linguistic elements that are correct and in context.” This indicator requires students to ultimately be able to write a text, which falls under the C6 (create) domain of Bloom’s taxonomy. If students are able to meet an indicator within the critical thinking domain, then it can be concluded that the students have successfully developed a certain level of their own critical thinking skills (Sugiyono, 2017).

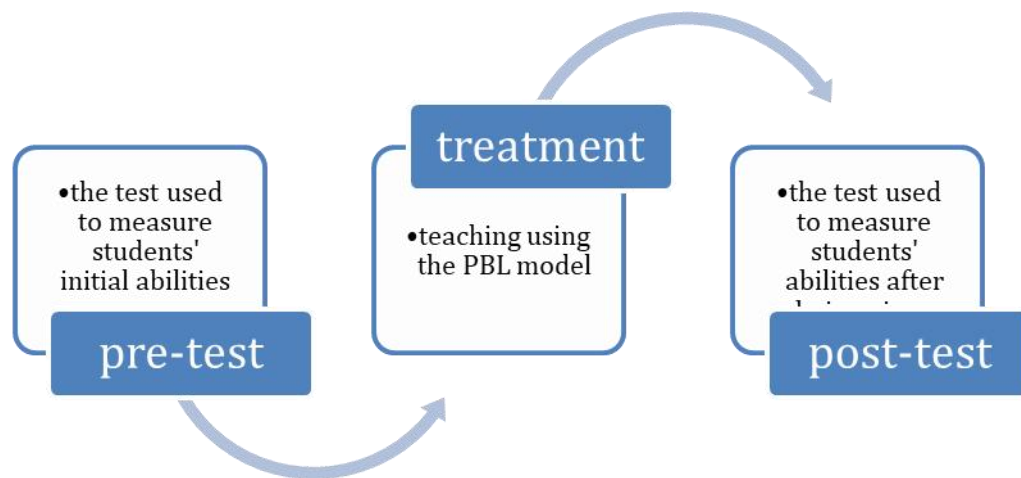
Based on what has been described above, this study aims to improve the understanding of procedural texts through the application of the PBL model and improve the critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya.

The hypotheses of the study are formulated as follows:

- Ho: There is no increase in the understanding of procedural texts through the application of the PBL model or the critical thinking skills of grade VIII students of SMP Nusantara Palangka Raya.
- Ha: There is an increase in the understanding of procedural texts through the application of the PBL model and the critical thinking skills of grade VIII students of SMP Nusantara Palangka Raya.

## **Research Method**

The research design used in this study was experimental. This study uses two variables, namely the independent variable (PBL model) and the dependent variable (the ability to understand the procedural text and the ability to think critically). The research design used was a pre-test-treatment-post-test design (Sugiyono, 2017). Pre-test refers to the test used to measure students' initial abilities, treatment refers to teaching using the PBL model, and post-test refers to the test used to measure students' abilities after being given treatment.



**Figure 1. Research design Pretest – Treatment - Posttest**

This research was conducted for five months, from June – October 2022 at SMP Nusantara Palangka Raya at Jalan Dr. Wahidin Sudiro Husodo, Langkai, Palangka Raya City, Central Kalimantan. Informants referred to in this study are sources of data based on subjects who master the problem, have data and are willing to provide complete and accurate information. The researcher used a purposive sampling method, with 10 students from Grade VIII SMP Nusantara Palangka Raya Year 2022/2023 as the samples. Data collection can be done through settings from various sources and in various ways. The data collection techniques used in this study include interviews, questionnaires, and tests. Instruments (tools to collect data) are interview sheets, questionnaires, and tests (pretest and posttest).

The data analysis technique used in this research is SPSS (Statistical Program for Social Science) which is a computer application program package for analyzing statistical data. With SPSS, one can create reports in the form of tabulations, charts (graphs), plots (diagrams) of various distributions, descriptive statistics, and complex statistical analyses. Based on the benefits above, this study applies SPSS to determine whether or not there is a significant effect of the application of the PBL model in improving students' understanding of procedural text and improving critical thinking skills.

## **Research Results and Discussion**

The research data was obtained from the pretest and posttest scores given to 10 students of class VIII SMP Nusantara Palangka Raya. The treatment given is in the form of applying a problem-based learning (PBL) model to understanding procedural text and critical

thinking skills (Higher Order Thinking Skills). The data were analyzed with the aim of answering the two problem formulations: first, whether or not there was a significant effect of the PBL model on the understanding of the procedural text of eighth-grade students of SMP Nusantara Palangka Raya; second, whether or not there is a significant relationship between the critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya on understanding the procedural text.

Paired-samples t-test analysis using SPSS was carried out to compare the pretest variable values of class VIII SMP Nusantara Palangka Raya students taken before receiving the PBL model treatment and the post-test variable values taken after receiving the PBL model treatment on understanding procedural text and critical thinking skills. The results of the data analysis will be described as follows.

The results of descriptive statistics from the two samples, namely the pretest and posttest scores of students regarding procedural texts indicate that in taking the pretest, the average value or mean is 69.1. In taking the posttest, the mean value of 88.1 was obtained. This value was obtained from 10 students who participated as the research sample. For the value of the standard deviation on the pretest was 5,527, and for the post-test, it was 8,478. Finally, obtained the value of Std. The mean error for the pretest is 1,748 and for the posttest is 2,681.

Seeing from the posttest average value of 88.1 is greater than the pretest 69.1, it can be concluded descriptively that there is a difference in the average value of the two test takings. With the posttest value greater than the pretest, namely  $88.1 > 69.1$ , it means descriptively that there is an increase in the average score of students after receiving treatment in the form of a PBL learning model to understand the procedural text and students' critical thinking skills. Although those numbers might suggest that PBL improved students' score, its significance and correlation are still needed to be proven.

Then to prove whether the difference is significant or not, it can be seen from the test results in the Paired Samples Correlation table. The analysis shows the results of the correlation test or the relationship between the two pretest variables and the posttest variables. Based on the test results, the correlation coefficient value or correlation is 0.872 with a significance value or sig. of 0.001. Due to the value of sig.  $0.001 < 0.05$  probability, it can be concluded that there is a correlation between the pretest and posttest variables.

Furthermore, in the Paired Samples Test, it can be seen whether or not there is an effect of the application of the problem-based learning (PBL) model on the understanding of the procedural text and the ability to think critically (Higher Order Thinking Skill) of class VIII SMP Nusantara Palangkaraya. Based on this analysis, it is known that the value of Sig. (2-tailed) is 0.000 which is less than 0.05. Then it can also be seen that the Mean Paired Difference value is -19.000. This figure shows the difference between the average pretest and posttest scores. Judging from the 95% Confidence Interval of the Difference Lower and Upper, the difference has a range between -22,252 to -15,748. From this it can be concluded that from the difference in the average pretest and posttest scores, there is an influence from the application of the PBL model in increasing understanding of procedural text and critical thinking skills of eighth grade students of SMP Nusantara Palangka Raya.

To determine the research hypothesis that will be accepted, it can be referred at the guidelines (Santoso, 2014). Decision-making guidelines in the paired sample t-test are based on the significance value (Sig.) of the SPSS output. The guidelines state that 1) if the value of Sig. (2-tailed) < 0.05, then H<sub>0</sub> is rejected and H<sub>a</sub> is accepted. On the other hand, 2) if the value of Sig. (2-tailed) > 0.05, then H<sub>0</sub> is accepted and H<sub>a</sub> is rejected. Based on the output of the Paired Samples Test, it is known that the value of Sig. (2-tailed) is 0.000 < 0.05, then H<sub>0</sub> is rejected and H<sub>a</sub> is accepted. Therefore, it is determined that there is an increase in the understanding of procedural texts through the application of the PBL model and critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya.

From the data that has been discussed, overall conclusions can be drawn to answer the two formulations of the research problem. First, it was found that there was a significant effect of the PBL model on the understanding of the procedural text for eighth-grade students of SMP Nusantara Palangka Raya. Second, there is also a significant relationship between the critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya on understanding the procedural text.

Creative thinking skills in this study were measured by one's ability to develop problem-solving designs and then connect, synthesize, and transform ideas to make students think creatively to create texts unique to each student.

Teachers participate in the application of PBL by providing guidance to students as they write their own texts. PBL methods are seen as ideal for learning because teachers are

needed as mentors who can support the learning process by asking questions and supervising the problem-solving process, where teachers help students find solutions to tasks (Kassab et al., 2017; Strobel & van Barneveld, 2009). Therefore, teachers had a part in the treatment by giving students the fundamental information before writing, such as the general traits of texts, and by giving them visual cues to help them write their own texts. It was anticipated that by doing this, the teacher would provide pupils with a challenging learning scenario and pique their curiosity to get the solutions on their own (Karyatin, 2017; Khoiriyah & Husamah, 2018).

Based on the findings, the research team found that procedural texts were taught better with the PBL method than without. During pre-observation, it was noticed that students had problems writing procedural texts, especially when trying to start writing texts. It is difficult for students to come up with ideas for writing, and they are reluctant to write, believing that they lack vocabulary and sentence-making knowledge. PBL method positively improved their knowledge and confidence. This can be proven by their pre-and post-test scores which are 69.1 and 88.1 respectively. The significance of the application of PBL on this difference can be seen from the Sig. (2-tailed) which is 0.000, and the degree of the correlation is proven by the result of 0.872 which means that scores before and after the PBL method were highly correlated.

This finding is consistent with earlier studies on the PBL learning method. According to studies, the PBL learning approach can enhance students' learning performance, critical thinking abilities, (Firdaus et al., 2015; Mutakinati et al., 2018), and even creative thinking abilities (Ulger, 2018). Thinking in a creative way is characterized by originality, fluidity, adaptability, and elaboration. Clarity of expression is referred to as fluency. The capacity to come up with a variety of ideas from various perspectives is known as flexibility. Being original is having the capacity to present original or unusual concepts that are distinct from those found in books or peculiar from the views of others. Elaboration is the capacity to clarify the driving forces and add specifics to the ideas at hand to significantly increase their value (Khoiriyah & Husamah, 2018; Surya & Syahputra, 2017). These are all the abilities that students hone in order to produce texts that are both appropriate and distinctively personal to each of them.



Specifically, the way PBL leads students to improve their learning outcomes is by encouraging them to use their knowledge in real-world situations. Because of the structured process of PBL— student orientation on the problem, organizing students to learn, guiding individual/group experiences, developing and presenting work, and analyzing and evaluating the problem-solving process — students' learning outcomes improved (Khoiriyah & Husamah, 2018; Supiyandi & Julung, 2016). Furthermore, due to its student-centered nature, the PBL method encourages students to explore their curiosity while learning the necessary skills to conduct in-depth problem-solving. They are also encouraged to combine theory and practice, apply different knowledge and skills to solve problems provided by teachers and develop essential skills (Amalia et al., 2017; Andini & Hobri., 2017; Mutakinati et al., 2018; Şendağ & Ferhan Odabaşı, 2009).

These results can be an answer to solving problems in the field where students have difficulty writing procedural text which results in their average score being below the minimum standard, as well as being an answer for teachers when they have difficulty in determining a suitable learning model for students teaching procedural text and in order to improve the critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya. This study, based on the data and results obtained, provides recommendations for the application of innovative learning models in the form of problem-based learning (PBL) to overcome these problems. This is because in this study it has been proven that the application of the PBL model is able to overcome problems that occur in the field and can improve the understanding of the procedural text and improve critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya.

## **Conclusion**

Overall, the results of the paired-sample t-test analysis showed that there was a significant increase from the pretest variable value to the posttest variable value for class VIII SMP Nusantara Palangka Raya students after receiving treatment in the form of a PBL model on procedural text understanding and critical thinking skills, where the score the pretest variable was  $M=69.1$ ,  $SD=5.527$ , and the posttest variable value was  $M=88.1$ ,  $SD=8,478$ ;  $t(9)=-13,217$ ,  $p=.000$ . These results are then described as follows in order to answer the formulation of the problem that is the purpose of this study.

First, it was found that there was a significant effect of the PBL model on the understanding of the procedural text for eighth-grade students of SMP Nusantara Palangka Raya. This conclusion is drawn from the descriptive difference between the mean of the pretest variable and the posttest variable, where the posttest value is greater than the pretest, namely  $88.1 > 69.1$ . This means that there is an increase in the average score of students after the implementation of the treatment. After that, it can be seen from the results of the correlation test that the effect of the difference in the mean value is significant where the value of sig.  $0.001 < 0.05$  probability, it can be concluded that there is a correlation between the pretest and posttest variables. In addition, the correlation coefficient value or correlation is 0.872. Therefore, it was concluded that the application of the PBL model had a significant effect on student scores.

Second, there is also a significant relationship between the critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya on understanding the procedural text. This can be seen from the significant difference between the values of the pretest and posttest variables, where there is a significant increase after the implementation of the PBL model to improve students' understanding of the procedural text and critical thinking skills. Furthermore, it is known that the value of Sig. (2-tailed) is  $0.000 < 0.05$ , then  $H_0$  is rejected and  $H_a$  is accepted. In conclusion, it is determined that there is an increase in the understanding of procedural texts through the application of the PBL model and critical thinking skills of eighth-grade students of SMP Nusantara Palangka Raya.

This study used the PBL learning approach to teach junior high school students English as a foreign language in Palangka Raya, Indonesia. The findings showed that students' learning performance in text writing and creative thinking skills were greatly enhanced. Therefore, it is strongly advised that the PBL method is applied in language learning classrooms to improve students' performance and creative thinking skills. Additionally, it is also suggested that future research apply the PBL technique in a variety of educational fields to provide students the chance to strengthen their thinking abilities and confirm whether PBL can enhance other areas of learning besides critical thinking abilities.

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