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Investigating the Impact of Problem-Based Learning on Eighth Graders' Reading Comprehension of Descriptive Texts: A Study at SMPN 1 Karangtanjung

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ABSTRACT

This research aimed to investigate the influence of Problem-Based Learning (PBL) on students' reading comprehension of descriptive texts among 8th-grade students at SMPN 1 Karangtanjung. The study employed a quantitative method with a quasi-experimental design involving two groups: an experimental class (VIII F) and a control class (VIII E), each consisting of 31 students. Data were collected through pre-tests and post-tests to assess students' reading comprehension before and after the treatment. The experimental class received instruction using the PBL method, while the control class was taught using conventional methods. The results showed a significant improvement in the experimental class, with the mean score increasing from 53.2 to 76.1, compared to the control class, which improved from 52.5 to 71.6. Statistical analysis using an independent sample t-test revealed a significance value of 0.000 (< 0.05), indicating a significant difference between the two groups. These findings suggest that the use of Problem-Based Learning positively influences students' reading comprehension in descriptive texts. Therefore, PBL can be considered an effective teaching strategy to enhance students' reading abilities.

Keywords: Problem-Based Learning, Reading Comprehension, Descriptive Text, 8th Grade, Quasi-Experimental Study.

Background

In the field of English language teaching, the development of the four macro skills—listening, speaking, reading, and writing—has become a central concern. Reading, in particular, plays a crucial role in acquiring knowledge, expanding vocabulary, and fostering critical thinking. However, despite its significance, reading comprehension remains a major challenge among students in Indonesia. The 2018 PISA (Programme for International Student Assessment) results ranked Indonesia 74th out of 79 participating countries, indicating a critical literacy issue among Indonesian students (Ekowati et al., 2023)

Several studies have identified factors contributing to poor reading comprehension in Indonesia, including limited vocabulary, lack of motivation, and ineffective instructional strategies (Nanda, 2020). Students who struggle with reading comprehension often face broader academic challenges, including lower self-confidence and reduced problem-solving abilities (Doğan Temur et al., 2018). To address these issues, innovative and student-centered approaches are needed. One such method is Problem-Based Learning (PBL), which emphasizes real-world problems, active learning, and student collaboration. PBL has shown potential in improving students' engagement, vocabulary acquisition, and overall comprehension skills (Dolmans et al., 2016). Research by Andriansah et al. (2019) has demonstrated that PBL enhances students' understanding of texts, especially in aspects such as vocabulary use, inference, and reference.

In particular, reading descriptive texts, which are commonly included in junior high school curricula, requires students to identify and understand specific information related to people, places, or things. This genre can be effectively taught using PBL, as it encourages students to engage critically with content and relate it to real-life contexts.

Observations at SMPN 1 Karangtanjung revealed several issues among 8th-grade students, including difficulties in understanding reading texts, low interest in reading activities, and inadequate vocabulary mastery. These challenges necessitate an alternative instructional strategy that not only improves comprehension but also enhances students' motivation. Therefore, Problem-Based Learning was selected as the proposed method for improving students' reading comprehension of descriptive texts.

This study seeks to examine the influence of using PBL on students' reading comprehension, specifically focusing on descriptive texts among 8th-grade students. The outcomes of this research are expected to offer theoretical insights and practical

guidance for English language educators seeking to enhance reading instruction through innovative pedagogical approaches.

Literature Review

Reading is a fundamental cognitive process that involves interpreting and constructing meaning from written texts through the interaction between the reader and the written language (Snow, 2002). In a more recent perspective, reading is also seen as a socioculturally situated practice shaped by values, beliefs, and power relations involving language, gender, ethnicity, and social class (Purcell-Gates et al., 2016). As a core skill, reading enables individuals to acquire information, improve critical thinking, and develop language proficiency (Arifin, 2020).

Reading comprehension, as an integral component of reading, refers to the process of understanding, interpreting, and constructing meaning from a text (Klingner et al., 2012). Effective comprehension goes beyond word recognition; it demands the integration of background knowledge, vocabulary, and strategic reading approaches (Nation, 2005). This ability allows readers to identify main ideas, draw inferences, interpret the author's purpose, and synthesize information from texts.

In the Indonesian context, reading comprehension among students remains low. According to PISA (2019), Indonesia ranked 74th out of 79 countries, signaling poor literacy performance. Several scholars, including (Nanda, 2020), attribute this issue to students' limited vocabulary, lack of motivation, and insufficient reading support. Students with poor comprehension often face academic difficulties and struggle with problem-solving (Doğan Temur et al., 2018).

Descriptive Text

Descriptive text is a type of functional text aimed at describing a particular person, place, or object vividly to allow the reader to visualize the subject matter (Khairina Anggun, 2016). The generic structure of descriptive text typically includes two parts: identification and description (Effendi, 2016). The identification introduces the subject, while the description elaborates on its characteristics using sensory details and vivid language.

The social function of descriptive text is to provide a clear representation of a person, place, or thing, enabling readers to construct mental images and foster deeper understanding (Thompson, 2014). In addition, descriptive texts utilize specific language features such as present tense, adjectives, linking verbs, and material or relational processes (Halliday et al., 2013)

In the junior high school curriculum, descriptive texts are part of the core reading materials, and students are expected to identify structure, content, and purpose. However, many students encounter difficulties in engaging with this type of text due to low vocabulary mastery and reading motivation.

Problem-Based Learning (PBL)

Problem-Based Learning (PBL) is a student-centered instructional approach that presents learners with real-life problems as the starting point for acquiring new knowledge (Dolmans et al., 2016). In the PBL model, students collaborate in groups, identify learning gaps, engage in self-directed research, and apply newly acquired information to solve the problems. PBL fosters critical thinking, self-directed learning, and collaborative skills, all of which are essential for language learning.

According to Holen (2000), PBL emphasizes several lifelong learning goals, including self-directed learning, information retrieval, teamwork, and reflective thinking. These competencies are crucial not only in academic settings but also in professional and personal development. The integration of PBL into reading instruction enhances students' engagement, motivation, and comprehension by shifting the learning responsibility from teacher to learner.

In the context of language education, Arends & Kilcher (2010) outlines five essential phases of PBL that can be adapted for reading instruction: (1) orientation to the problem, (2) organizing learners, (3) guiding investigation, (4) developing and presenting work, and (5) analyzing and evaluating the process. These stages promote active learning and allow students to explore texts meaningfully while solving contextual problems.

Previous studies have shown that PBL can significantly improve students' reading comprehension and motivation (Andriansah et al., 2019). By using descriptive texts as a medium, PBL encourages students to connect content with real-life contexts, fosters higher-order thinking, and enhances their ability to understand and evaluate written texts.

Method

This study employed a quantitative approach using a quasi-experimental design with a pre-test and post-test structure to examine the influence of Problem-Based Learning (PBL) on students' reading comprehension of descriptive texts. According to Creswell (2003), quantitative methods involve collecting and analyzing numerical data to test hypotheses and make generalizations.

The research was conducted on two distinct groups: an experimental class, which received the PBL treatment, and a control class, which received conventional instruction. The design can be illustrated as follows:

Class	Pre-test	Treatment	Post-test
E	X_1	T_1	Y_1

K	X_2	T_2	Y_2

Source: (Sugiyono, 2013)

The population of this study consisted of all eighth-grade students at SMPN 1 Karangtanjung in the academic year 2022/2023. Due to practical considerations and access limitations, the researcher employed purposive cluster sampling to select two intact classes as the research sample. Class VIII F, consisting of 31 students, was designated as the experimental group, while Class VIII E, also consisting of 31 students, served as the control group. This sampling method was chosen to ensure feasibility and contextual appropriateness, as random individual sampling was not viable in the school setting (Arikunto, 2006). To gather data, the researcher utilized a testing method, administering both pre-tests and post-tests to assess students' reading comprehension before and after the implementation of Problem-Based Learning (PBL). As stated by Suwartono (2014), data collection techniques involve systematic procedures for gathering research data.

The primary research instrument was a reading comprehension test, comprised of 20 multiple-choice questions focusing on descriptive texts. Prior to its use, the instrument was validated through a try-out involving 50 multiple-choice questions given to students outside the research sample. This try-out aimed to test the validity and reliability of the items, with any poorly constructed questions subsequently revised or removed. The pre-test was then administered to both experimental and control groups to determine students' baseline reading comprehension. Following the treatment, a post-test was given using a different set of 20 multiple-choice questions to evaluate the improvement in students' reading comprehension and to measure the effectiveness of the PBL approach.

Result and Discussion

The results of this study demonstrate a significant influence of using the Problem-Based Learning (PBL) method on the reading comprehension skills of eighth-grade students at SMPN 1 Karangtanjung in descriptive texts. The research involved two classes: class VIII F as the experimental group and class VIII E as the control group, each consisting of 31 students. The data were collected during the second semester of the 2022/2023 academic year using a written test in the form of 20 multiple-choice questions administered as both pre-tests and post-tests.

Prior to the implementation of the main tests, the researcher conducted a try-out on class VIIIB students to ensure the validity and reliability of the test items. The validity test revealed that 40 out of 50 items had significance values (2-tailed) less than

0.05, indicating they were valid, while 10 items were found to be invalid and were excluded from the main test. The reliability test using Cronbach's Alpha yielded a coefficient of 0.887, which exceeds the minimum threshold of 0.60, indicating that the test instrument was highly reliable and consistent.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PretestEks	31	40	65	53.23	7.365
PosttestEks	31	65	90	76.13	8.237
PreTestKontrol	31	35	65	52.58	7.945
PostTestKontrol	31	60	80	71.61	6.375
Valid N (listwise)	31				

In the pre-test, the experimental class scored between 40 and 65 with an average of 53.23, while the control class scored between 35 and 65 with an average of 52.58. After the treatments—where the experimental group was taught using the PBL method and the control group received conventional scientific teaching—the post-test results showed that the experimental class scores ranged from 65 to 90 with a mean of 76.13, while the control class scores ranged from 60 to 80 with a mean of 71.61.

		Statistic	df	Sig.
Hasil Belajar	Pretest Eksperimen	.144	31	.102
	Posttest Eksperimen	.135	31	.158
	Pretest Kontrol	.147	31	.084
	Posttest Kontrol	.154	31	.059

Statistical analysis using the Kolmogorov-Smirnov test confirmed that all pre-test and post-test scores in both groups were normally distributed ($p > 0.05$). Homogeneity testing based on the mean also showed a significance value of 0.148 ($p > 0.05$), indicating that the data between the experimental and control groups were homogeneous. Furthermore, hypothesis testing using a paired sample t-test resulted in significance values (2-tailed) of 0.000 for both groups, which is less than 0.05. Therefore, the null hypothesis (H0) was rejected and the alternative hypothesis (Ha) was accepted, confirming that there was a statistically significant difference between the pre-test and post-test scores in both groups.

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar	Based on Mean	2.144	1	60	.148
	Based on Median	1.642	1	60	.205
	Based on Median and with adjusted df	1.642	1	57.571	.205
	Based on trimmed mean	2.011	1	60	.161

To determine the practical significance of the findings, the researcher calculated the effect size using Cohen's d formula. The result was a value of 0.61, which falls into the medium-to-large category, suggesting that the application of the PBL method had a meaningful impact on students' reading comprehension.

Descriptively, the improvement in scores was more substantial in the experimental class than in the control class. This indicates that students who were taught using the PBL approach showed better understanding of descriptive texts, were more capable of explaining the structure and content, and were more actively engaged in the learning process. These findings are in line with previous studies, such as Arjuna (2016), who found that students enjoyed learning through the PBL method and that their prior knowledge supported deeper comprehension of the material.

In contrast, although the control class also experienced an increase in post-test scores, the improvement was not as significant. Several students in the control group appeared passive, lacked interest in reading, and were not fully attentive during lessons. The difference in classroom atmosphere and student engagement likely contributed to the variance in learning outcomes between the two groups.

In conclusion, the research findings clearly show that the Problem-Based Learning method significantly improves students' reading comprehension of descriptive texts. The combination of statistical and practical analysis supports the conclusion that PBL is an effective instructional strategy for enhancing reading skills among junior high school students at SMPN 1 Karangtanjung.

Conclusion

Based on the findings of this research, it can be concluded that the use of the Problem-Based Learning (PBL) method significantly enhances students' reading comprehension of descriptive texts. This conclusion is supported by statistical analysis showing that the significance value (Sig. 2-tailed) for both the experimental and control classes was 0.000, which is less than the threshold of 0.05. This indicates a

significant difference between the pre-test and post-test scores, leading to the rejection of the null hypothesis (H_0) and the acceptance of the alternative hypothesis (H_a). Therefore, it is evident that PBL has a positive impact on students' reading comprehension in the eighth grade of SMPN 1 Karangtanjung.

Furthermore, the implementation of PBL not only improved students' test scores but also fostered active participation, enhanced confidence, and encouraged collaborative learning during classroom discussions. These findings suggest that PBL is an effective and appropriate method for teaching reading, especially in fostering deeper understanding and engagement among students. Teachers are therefore encouraged to incorporate the PBL approach into their reading instruction to create a more interactive and student-centered learning environment.

In addition, the success of teaching is influenced not only by the curriculum but also by the methods used and the ability of teachers to present material in an engaging and meaningful way. Given the importance of reading as a foundational skill in language learning, strategies like PBL that promote critical thinking, communication, and problem-solving are essential.

For future research, it is recommended that the use of the PBL method be explored further across different grade levels and educational settings. This would help validate the effectiveness of PBL in various contexts and contribute to the broader application of student-centered approaches in language education, ultimately supporting the development of students' reading comprehension skills at a wider scale.

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