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The Effectiveness of Problem-Based Learning and Survey, Question, Read, Recite, Review to Improve Students' Reading Comprehension

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Abstract

This study addresses the effectiveness of the PBL (Problem-Based Learning) method and the SQ3R (Survey, Question, Read, Recite, Review) method on students' reading comprehension, considering their different motivation levels, at SMPN 2 Gebog Kudus. The primary objective of this research is to compare the effectiveness of the PBL and SQ3R methods in enhancing reading comprehension among seventh-grade students with different motivation levels. This study employed an experimental research design, involving 30 seventh-grade students from SMPN 2 Gebog Kudus. The data were collected through questionnaires and tests. The questionnaire assessed students' perceptions of the PBL and SQ3R methods as well as their motivation in language learning. The tests measured students' reading comprehension before and after the intervention. SPSS Version 27 was used for data analysis, including hypothesis testing. The results indicated that the SQ3R method was more effective than the PBL method in improving reading comprehension among students with different motivation levels. The significance values for the tests are: (1) PBL method with high motivation: 0.012 ($p < 0.05$), PBL method with low motivation: 0.270 ($p > 0.05$), SQ3R method with high motivation: 0.017 ($p < 0.05$), SQ3R method with low motivation: 0.018 ($p < 0.05$). It can be concluded that the SQ3R method proved to be more effective than the PBL method in improving students' reading comprehension, especially when considering different motivation levels. This research contributes to enhancing critical thinking skills and learning outcomes in Junior High School (SMP) students, particularly in reading comprehension, through the application of the SQ3R method. It highlights the importance of incorporating effective methods such as SQ3R in teaching strategies to improve student performance in language learning.

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INTRODUCTION

Reading comprehension is a cornerstone of English language acquisition, essential for academic success and lifelong learning. Despite its importance, many students struggle with understanding texts, often due to inadequate teaching methods and low motivation levels (Tankersley, 2003). Comprehension enables readers to acquire new knowledge, but challenges such as limited attention spans and poor engagement hinder progress. Motivation, a critical factor in language learning, significantly influences students' reading abilities (Gardner, 2014).

Motivation issues frequently arise from the teaching approaches employed. Ineffective or monotonous methods can disengage students, reducing their ability to comprehend texts (Nurhidayat, 2021; Rahardjo & Pertiwi, 2020; Riswanto and Aryani (2017). Recognizing these issues, Kurikulum Merdeka emphasizes student-centered and engaging learning activities. It promotes inclusive practices, problem-solving, and critical thinking, aligning with the evolving needs of modern education.

To address these challenges, this study focuses on two pedagogical strategies: Problem-Based Learning (PBL) and the Survey, Question, Read, Recite, Review (SQ3R) method. PBL immerses students in problem-solving scenarios relevant to their studies, fostering collaboration and active learning (Baden & Major, 2004). Previous studies, such as Kaganang (2019), Lin (2018) and Masek and Yamin (2011) have demonstrated PBL's potential to improve reading scores by engaging students in meaningful tasks. However, its effectiveness varies, particularly for students with low motivation. Conversely, the SQ3R method provides a structured approach to reading comprehension, guiding students through systematic steps to identify main ideas, infer meanings, and summarize texts effectively (Sudarsono & Astutik, 2024). Kusumayanthi and Maulidi (2019), Nabilla and Asmara (2022), and Sugiharti et al. (2020) found that SQ3R enhances comprehension across multiple dimensions, including understanding explicit and implicit meanings.

While both methods have shown promise, gaps remain in understanding their comparative effectiveness under different motivational contexts. Preliminary observations at SMPN 2 Gebog Kudus revealed persistent challenges in improving students' reading comprehension and motivation. Addressing these gaps, this study aims to:

1. evaluate the effectiveness of the PBL method for students with high and low motivation.
2. assess the effectiveness of the SQ3R method for students with high and low motivation.
3. compare the effectiveness of PBL and SQ3R methods across varying motivation levels.

This research seeks to contribute valuable insights into enhancing reading comprehension and aligning teaching strategies with Kurikulum Merdeka's objectives by exploring these questions.

METHOD

This experimental study involved seventh-grade students from SMPN 2 Gebog Kudus. The participants (N=30) were divided into experimental groups based on their motivation levels (high and low). The interventions spanned four weeks, during which the PBL and SQ3R methods were alternately implemented.

Two instruments were used, with details as follows:

1. **Motivation Questionnaire**: It was adapted from Gardner (2014), and consusts of 20 Likert-scale items ranging from "strongly agree" to "strongly disagree". Pilot testing validated the questionnaire (Cronbach's $\alpha = 0.85$).
2. **Cloze Test**: A 25-item multiple-choice test was used to assess students' reading comprehension of descriptive texts. It was administered before (Pre-Test) and

after (Post-Test) the interventions. The test's reliability was confirmed (α = 0.88).

The study involved some stages. First, a pre-test was administered to establish baseline reading comprehension levels. It was followed by the classification of students into high and low-motivation groups based on the questionnaire scores. After that, PBL and SQ3R methods were implemented over the four weeks. During the implementation of PBL, the students engaged in group discussions to solve contextual problems. Meanwhile, during the SQ3R implementation, the students followed a structured process of surveying, questioning, reading, reciting, and reviewing texts. After that, a post-test was administered to measure the impact of the implementation of both methods. Finally, statistical analysis using paired-sample t-tests, independent t-tests, and two-way ANOVA.

RESULTS AND DISCUSSIONS

The study explored the effectiveness of the Problem-Based Learning (PBL) and Survey, Question, Read, Recite, Review (SQ3R) methods in enhancing reading comprehension among seventh-grade students with varying motivation levels.

The Effectiveness of PBL Method on Reading Comprehension of Students with High Motivation

Addressing the first research question in this section, pre-test and post-test were used to collect the data. There were 32 participants who answered the tests. The PBL method was effective on the reading comprehension of students with high motivation."

The researchers was tested using the Paired-Samples T-Test, with analysis conducted using the SPSS 27 software. Here's a detailed explanation:

Table 1. The result from Paired Samples Test PBL Method with High Motivation

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PRE TES - POST TES	-11,20000	11,28224	3,56776	-19,27083	-3,12917	-3,139	9	0,012

According to Table 1, the analysis conducted using the Paired-Samples T-Test showed that the mean of the pretest and post-test scores was -11.20000, with a standard deviation of 11.28224 and a standard error of the mean at 3.56776. The lower difference was -19.27083, while the upper difference was -3.12917.

The t-test result was t = -3.139 with 9 degrees of freedom and a significance level of 0.012.

With a significance value of 0.012, which was less than the significance level of 0.05, the null hypothesis, which stated that there was significant difference in scores using the PBL method for reading comprehension among students with high motivation, was accepted.

This outcome is consistent with previous research; for instance, Kristyanawati et al. (2019) reported that PBL increased students' motivation in English learning, with students showing enhanced engagement and attentiveness during the learning process. Additionally, Suhendri and Kurniawan (2020) suggested that PBL may enhance students' motivation and reading skills in narrative text learning. Safitri et al (2022) students' motivation influenced their achievement in English. Additionally, students actively participated and engaged in learning through a student-centered approach.

Furthermore, PBL is an instructional approach in English language education involving several stages: orienting students to problems, organizing research groups, guiding exploration, developing and presenting products, and reflecting on the problem-solving process. These outcomes indicate that the PBL method enhances students' English language skills (Rosyidin et al, 2022).

Hidayati (2020) stated that PBL can improve problem-solving skills with the steps: (1) orienting students to the problem classically; (2) organizing students to study in a group work of four people and the division of tasks for each member; (3) guiding individual and group investigations on the same topic, discussed maximum in two groups; (4) developing and presenting the work done in front of the class with more time allo-cation in the discussion session; (5) analyzing and evaluating the problem-solving process that fo-cuses on re-checking the results.

Furthermore, analysis of the pretest and post-test data revealed improvements in students' reading comprehension in each assessment. Initially, the mean pretest score in 7A was 64.875, indicating that many students did not reach the minimum passing score (KKM Score) of 70. After implementing the PBL method, the mean post-test score increased to 70.75, indicating that many students were able to achieve the KKM Score of 70.

The Effectiveness of PBL Method on Reading Comprehension of Students with Low Motivation

Answering the second research question, "The PBL method was not effective in the reading comprehension of students with low motivation."

The researchers testing utilized the Paired-Samples T Test, conducted through the SPSS 27 software. The result is outlined as follows:

Table 2. The Result From Paired

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PRE TES - POST TES	4,40000	11,84342	3,74522	-4,07227	12,87227	1,175	9	0,270

Samples Test PBL Method with Low Motivation Based on the table presented, the analysis utilized a Paired-Samples T Test. The mean for both the pretest and post-test was 4.40000, with a standard deviation of 11.84342 and a standard error of the mean at 3.74522. The lower difference was -4.07227, while the upper difference was 12.87227. The t-test result was t = 1.175 with 9 degrees of freedom and a significance level of 0.270.

The significance value of 0.270, which exceeded the significance level of 0.05, led to the rejection of the null hypothesis, indicating that there was no significant difference in scores using the PBL method for reading comprehension among students with low motivation.

The PBL method was ineffective for low-motivation students, several potential reasons can explain this outcome:

1. **High Cognitive Demand**: PBL requires students to actively engage in problem-solving, critical thinking, and collaboration. Low-motivation students may struggle to meet these demands due to a lack of intrinsic drive and confidence in their abilities.
2. **Group Dynamics**: PBL often involves group work, where success depends on the active participation

   of all members. Low-motivation students may rely on peers to complete tasks, leading to uneven engagement and reduced personal learning gains.
3. **Time-Intensive Nature**: The iterative process of identifying problems, researching solutions, and presenting
4. findings can be overwhelming for students who lack perseverance or organizational skills. This aligns with Vanishree et al. (2018), who noted that uncommitted study groups and time-consuming activities are common drawbacks of PBL.
5. **Facilitator Role**: PBL relies on facilitators to guide rather than direct learning. Without strong guidance, low-motivation students may feel lost or disengaged, reducing the method's effectiveness.

Furthermore, the analysis of pretest and post-test data revealed notable improvements in students' reading comprehension across both assessments. Initially, the mean pretest score in 7A was 64.875, indicating that many students did not achieve the minimum passing score (KKM Score) of 70. Following the implementation of the PBL method, the mean post-test score increased to 70.75, signifying that a greater number of students met or exceeded the KKM Score of 70.

Significant Difference between High and Low Motivation on Students in Reading Comprehension Session Taught by Using PBL Method

In the third research question, "There was a significant difference between students with high and low motivation in a reading comprehension session taught using the PBL method."

The researchers was tested using the Independent-Samples T Test, with analysis conducted using the SPSS 27 software. This process can be explained as follows:

Table 3. Result of Independent Samples Test PBL Method on Students with Different Motivation

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
nilai	Equal variances assumed	0,205	0,656	2,842	18	0,011	14,80000	5,20683	3,86085	25,73915
	Equal variances not assumed			2,842	17,254	0,011	14,80000	5,20683	3,82687	25,77313

According to the table above, the analysis using the Independent-Samples T Test indicated a significance value of 0.011, which was less than the significance level of 0.05. Therefore, the null hypothesis, which stated that there was significant difference in scores between students with high and low motivation in a reading comprehension session taught using the PBL method, was accepted.

This result was also supported by the research done by Kristyanawati, Suwandi, and Rohmadi (2019) claimed that PBL increased students' motivation in English learning. The students pay attention and follow the learning process carefully. Previously discussed how Problem-Based Learning (PBL) serves as an effective instructional approach to enhance students' reading abilities. The implementation of PBL resulted in heightened student engagement and enthusiasm. Assigning problems for group exploration facilitated the development of brainstorming skills among students, leading to the generation of multiple solutions. According to Suhendri and Kurniawan (2020), PBL was found to enhance student motivation and reading proficiency in narrative text learning. Initially, the average motivation scores were 59 in the first cycle, 25 in the second cycle, and 76.125 in the third cycle. Concurrently, students' reading skills in learning narrative content improved from an average of 58 in the initial cycle to 68 in the second cycle, and further to 79 in the third cycle.

The Effectiveness of SQ3R Method on Reading Comprehension of Students with High Motivation

In this fourth reseach question, "The SQ3R method was effective in improving reading comprehension among students with high motivation."

The researchers was tested using the Paired-Samples T-Test, with analysis conducted using the SPSS 27 software. This process can be explained as follows:

Table 4. Result of Paired Samples Test SQ3R Method with High Motivation

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PRE TES - POST TES	-11,20000	12,19107	3,85516	-19,92097	-2,47903	-2,905	9	0,017

According to the table above, the analysis using the Paired-Samples T Test revealed the following results: The mean difference between the pretest and post-test scores was -11.20000, with a standard deviation of 12.19107 and a standard error of the mean of 3.85516. The lower difference was -19.92097, and the upper difference was -2.47903. The t-test resulted in a value of -2.905 with 9 degrees of freedom and a significance level of 0.017.

The significance value of 0.017, which was less than the significance level of 0.05, led to the acceptance of the null hypothesis, indicating that there was significant difference in scores using the SQ3R method for reading comprehension among students with high motivation.

These outcomes are consistent with Sudarsono and Astutik's (2024) research, which demonstrated that the SQ3R method significantly improved reading test scores and positively influenced student perceptions, thereby enhancing motivation for reading.These results underscore the capacity of the SQ3R method to enhance reading skills and boost involvement in learning English, providing valuable perspectives for educators and curriculum design.

Syahfutra (2017) also detailed the significant impact of the SQ3R method on enhancing students' reading comprehension and motivation. These outcomes suggest that the SQ3R method equips students and educators with additional knowledge, demonstrating that highly motivated students are more empowered and enthusiastic about applying effective language learning strategies. Haerazi et al (2019) showed that increased motivation also positively affected students' reading comprehension. This research employed classroom action research, which was implemented in two cycles. Each cycle included four stages: planning, action, observation, and reflection. In addition, according to Jerome (1989) the SQ3R method could be used effectively at the junior high school level, where the content of the lesson becomes more important.

Furthermore, analysis of both pretest and post-test data indicated improvements in students' reading comprehension in each assessment. The pretest mean score in 7B was 72.125, suggesting that many students met the minimum passing score (KKM) of 70. After the implementation of the SQ3R method, the post-test mean score increased to 79.625, indicating that many students continued to meet the KKM score of 70.

The Effectiveness of SQ3R Method on Reading Comprehension of Students with Low Motivation

In fifth research question, "The SQ3R method is effective in improving reading comprehension among students with low motivation."

The researchers was tested using the Paired-Samples T Test, with analysis conducted using the SPSS 27 software. This process can be described as follows:

Table 5. Result of Paired Samples Test SQ3R Method with Low Motivation

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PRE TES - POST TES	-6,00000	6,59966	2,08700	-10,72111	-1,27889	-2,875	9	0,018

According to the table above, the analysis using the Paired-Samples T Test revealed the following results: The mean difference between the pre-test and post-test scores was -6.00000, with a standard deviation of 6.59966 and a standard error of the mean of 2.08700. The lower difference was -10.72111, and the upper difference was -1.27889. The t-test resulted in a value of -2.875 with 9 degrees of freedom and a significance level of 0.018.

The significance value of 0.018, which was less than the significance level of 0.05, led to the acceptance of the null hypothesis, indicating that there was significant difference in scores using the SQ3R method for reading comprehension among students with low motivation.

This outcome found support in Sudarsono and Astutik's (2024) research, which demonstrated that the SQ3R method enhanced test scores significantly and fostered positive student perceptions, thereby boosting reading motivation. These outcomes underscored the potential of the SQ3R method to enhance both reading proficiency and engagement in English language learning, offering valuable insights for educators and curriculum developers.

Additionally, analysis of pretest and post-test data revealed significant improvements in students' reading comprehension. The mean score for the pretest was 72.125, indicating that many students met the minimum passing score (KKM) of 70. Following the implementation of the SQ3R method, the mean score for the post-test increased to 79.625, further indicating that many students achieved the KKM score of 70.

The Significant Difference Between High and Low Motivation in Students Throughout Reading Comprehension Sessions Taught by Using SQ3R Method

In this sixth research question, "There was no significant difference between students with high and low motivation in a reading comprehension session taught using the SQ3R method."

The researchers tested the results using the Independent-Samples T-Test, with analysis conducted using the SPSS 27 software. This process is outlined as follows:

Table 6. Result of Independent Samples Test SQ3R Method on Students with

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
nilai	Equal variances assumed	0,001	0,976	1,133	18	0,272	4,400	3,885	-3,762	12,562
	Equal variances not assumed			1,133	17,962	0,272	4,400	3,885	-3,763	12,563

According to the table above, the analysis using the Independent-Samples T Test indicated a significance value of 0.272, which was greater than the significance level of 0.05. Therefore, the null hypothesis, which stated that there was no significant difference in scores between students with high and low motivation in the reading comprehension session taught using the SQ3R method, was rejected.

This outcome found support in Soleha (2021) conclude that the SQ3R method is an effective teaching and learning method that the teacher can use to improve students' reading comprehension and interest.Implementing the sq3r method would make the students remember what they read for an extended period and increased their understanding of the text. Not only increased their understanding but also increased their interest. Students' more focused, concentrative, responsive, and active to join the class activity.

Significant Difference Between the Use of PBL Method and SQ3R Method in Reading Comprehension to Students with High and Low Motivation.

In this seventh research question, "There is significant difference between the use of the PBL method and the SQ3R method in improving reading comprehension among students with high and low motivation."

The researchers' test was conducted using the ANOVA Test, utilizing the SPSS 27 software. This procedure is detailed as follows:

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Nilai	.082	64	.200*	.984	64	.555

Figure 1. Result of Normality Test in ANOVA

The table above illustrated that the analysis was conducted using the ANOVA Test. The significance value for the normality test was 0.555, which exceeded 0.05. This indicated that the assumption of normality was fulfilled because the data were normally distributed.

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
Nilai	Based on Mean	4.469	3	60	.007
	Based on Median	3.590	3	60	.019
	Based on Median and with adjusted df	3.590	3	45.643	.021
	Based on trimmed mean	4.468	3	60	.007

Figure 2. Result of Homogenity Test in ANOVA

Subsequently, the homogeneity test yielded a significance value of 0.07, which was greater than 0.05, indicating that the data were heterogeneous.

Tests of Between-Subjects Effects

Dependent Variable: Nilai

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	919.386[a]	3	306.462	5.478	.002
Intercept	347295.823	1	347295.823	6208.430	.000
Motivasi	411.823	1	411.823	7.362	.009
Model	417.314	1	417.314	7.460	.008
Motivasi * Model	1.314	1	1.314	.023	.879
Error	3356.364	60	55.939		
Total	398032.000	64			
Corrected Total	4275.750	63			

a. R Squared = .215 (Adjusted R Squared = .176)

Figure 3. Result of ANOVA

From the table provided, the researchers concluded the final outcomes, as follows:

1) Motivation: The significance value of 0.009, which indicates that the value is less than 0.05, indicates a significant difference between the results of the post-test based on various levels of motivation.
2) Models: The significance score of 0.008, which was less than 0.05, indicated significant differences between the observed values based on the model.

The outcomes were further corroborated by Ilmiah et al (2023), who also discussed how the results of their research demonstrated that reading skills could be enhanced through the PBL and SQ3R methods, yielding satisfactory outcomes. This improvement was evident in the increased average comprehension levels, rising from 68.74% in cycle I to 87.5% in cycle II. The research concluded that implementing the PBL and SQ3R methods effectively enhanced the reading skills of sixth-grade students at SD Negeri Kapunda.

The findings of this study contribute to English as a Foreign Language (EFL) practices by emphasizing the importance of tailoring teaching methods to students' motivational levels. For high-motivation students, PBL can be a powerful tool to develop critical thinking and problem-solving skills. For low-motivation students, the SQ3R method offers a structured, supportive approach that enhances comprehension and engagement. The broader applicability of SQ3R makes it a valuable strategy for diverse classrooms, aligning with the goals of Kurikulum Merdeka to foster inclusive and student-centered learning.

CONCLUSION

This study examined the effectiveness of Problem-Based Learning (PBL) and Survey, Question, Read, Recite, Review (SQ3R) methods on students' reading comprehension, considering their motivation levels. The key findings show that the PBL method is effective for students with high motivation ($p = 0.012$), enhancing engagement and interaction. However, it is considered Ineffective for students with low motivation ($p = 0.270$), highlighting the need for structured support. In line with that, the SQ3R method was consistently effective for both high- and low-motivation students ($p = 0.017$ and $p = 0.018$, respectively). These findings emphasize the importance of aligning instructional methods with students' motivational needs. SQ3R's structured approach makes it especially valuable for diverse classrooms, while PBL requires adaptations to support less motivated learners. Future research should explore hybrid strategies to leverage the strengths of both methods.

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