The Influence of the Problem Based Learning Model on Indonesian Language Learning Results for Class IV Traffic Sign Material at SDN 3 Menawan

Pramitasuri, Nadia[1] & Fajrie, Nur[2]

[1]Muria Kudus University, 59327, Central Java, INDONESIA

*Corresponding author email: nurfajrie@umk.ac.id

Abstract: Education at school has a series of subjects that students need to master, one of which is Indonesian. Learning Indonesian traffic material is considered boring for some students. To overcome this, this research applies the Problem Based Learning model because it can create an interesting learning atmosphere. This research aims to determine the effect of the Problem Based Learning learning model on the Indonesian language learning outcomes of class IV students at SDN 3 Menawan. The research used a quantitative approach with a sample of 23 class IV students at SDN 3 Menawan. Data collection is carried out through tests. Data analysis was carried out using SPSS with the paired sample t test. Learning outcomes can be seen from the class average which has increased, namely 54 (pretest) increasing to 84 (posttest). The paired sample t test shows that the significance value α is $0.000 < 0.05$. This means that Ho is rejected and Ha is accepted. The application of the problem-based learning model has an influence on the Indonesian language learning outcomes for class IV SDN 3 Menawan.

Keywords: Learning Model, Problem Based Learning, Learning Achievement

1.   Introduction

Education has a very important role in human life, because through education humans can achieve their best potential. Law No. 20 of 2003 concerning the National Education System explains that education is a deliberate and planned effort to create a learning environment that allows students to actively develop themselves in spiritual aspects, self-control, personality, intelligence, noble character, and the skills needed to interests of oneself, society, nation and state. Thus, there is a need to improve and improve the curriculum, the quality (model or method) of learning, as well as increasing teacher competency and improving infrastructure (Fajrie and Masfuah, 2018).

The learning model or method contains structured steps that are used as a guide in carrying out learning activities to achieve learning goals (Sari, 2020). One interesting method is the Problem Based Learning learning model in Indonesian language subjects. Indonesian language subjects at elementary school level include four elements, namely speaking, listening, reading and writing skills. The Problem Based Learning learning model is a series of learning that requires real solutions to real problems. According to Annisa, Fajrie and Ahsin (2021) the Problem Based Learning model is a learning model that contains phases where the learning process uses authentic problems, students actively think, facilitate, communicate, search and process and conclude data. It is important to note that the implementation of the Problem Based Learning model needs to be adapted to the characteristics of elementary school students. This is in line with Siti Anisah and Holis (2020) that the characteristics of students are still like playing, high curiosity, concrete operational thinking, like moving around, like working in groups, and like feeling/doing things directly so that educators need to create enjoyable learning process.

Efforts to increase students' ability to understand the material and learning outcomes can be supported by the use of media. Learning media is very useful for student learning. The use of media in education must also be reviewed, because not all media can be used to convey lesson content well and choosing the right media to achieve learning objectives can be achieved optimally. One form of interactive media is the Merantas application. This application is supported by Articulate Storyline software, which is software that offers features such as videos, images, animations, audio photos and others. Articulate storyline has a function similar to the Microsoft Power Point application, so it can make learning

student-centered. The reasons why this application is used as a learning medium include (1) students dig up information from various sources, then collect information obtained from the application and students can provide feedback to each other on presentation activities that can add information. (2) this application is in accordance with the characteristics of students who like something new. Articulate storyline has several interesting advantages (1) it can be easily created by yourself, whether experienced or not, (2) it can include several forms of files, such as text, images, video, animation, and so on, (3) it can be in audio form and visuals, sound and images can be created in the articulate storyline, (4) there is an application for creating quizzes without uploading external files, and (5) providing interactive content that more involves students in learning (Indriani, Artika and Ningtias, 2021).

Learning outcomes are changes in performance obtained by students after experiencing learning activities. The acquisition of aspects of performance change depends on what the student learns. Therefore, if students learn knowledge about concepts, changes in performance will occur in the form of mastery of concepts (Winget & Persky, 2022; Sedrakan et al., 2022). Learning outcomes in this research are defined as the results of students' cognitive tests.

Previous research using the Problem Based Learning model was carried out by Badriyah, Wicaksono and Jumanto (2024) with the title "The Influence of the Problem Based Learning Model on the Writing Skills of Class II Students at Madyotaman Surakarta State Elementary School in Indonesian Language Subjects for the 2023 Academic Year/ 2024" states that there are differences in writing skills in Indonesian language subjects before and after being treated with the Problem Based Learning approach. The average score for the pretest assessment was 67.25 while the posttest score was 83.71. At a significance level of 5%, the findings of data analysis using the Paired Sample T-test test procedure produce tcount = 12.629 and ttable with dk = (N-1) so (28-1) = 27. So, it is concluded that tcount > ttable or 12.629 > 1.703 which means Ha is accepted and Ho is rejected. The findings of this research show that the use of the Problem Based Learning model has an influence. Other research conducted by Ma'ruf Alfansuri, Handayani and Rahma (2024) with the title "The Influence of the Problem Based Learning Model on Learning Outcomes in Indonesian Language Subjects in Class IV of SD Negeri 02 Karangpandan Academic Year 2023 / 2024" states that tcount > ttable or 17.010 > 2.052 which means Ha is accepted and Ho is rejected. The lower value is 29,400 and the upper value is 23,100. The Ha criterion is accepted if the significance value tcount > ttable, so that Ho is rejected and Ha is accepted. From the statement above it can be concluded that the hypothesis states "There is an influence of the use of the Problem Based Learning Model on Learning Outcomes in Indonesian Language Subjects. The material for finding the main idea in the fourth grade elementary school paragraph Negeri 02 Karangpandan academic year 2023/2024", this is proven to be true at a significance level of 5%.

This is appropriate that teachers apply learning that is usually applied in daily activities so that educators need to change the way they teach by using models/methods that are effective and enjoyable for students so that students can understand the learning material optimally (Szymkowiak et al., 2021). Seeing this, the researcher was interested in conducting research on "The Influence of the Problem Based Learning Model on Indonesian Language Learning Results for Class IV Traffic Sign Material at SDN 3 Menawan"

2. Methodology

This research uses a quantitative type of research. Quantitative research is a research approach that uses data in the form of numbers and exact knowledge to answer research hypotheses. The method used is Pre-Experimental Design and One Group Pretest-Posttest Design. This method carries out treatment in the same group. The initial stage is carrying out a pretest before treatment is carried out, the second stage is carrying out treatment on a group, the final stage is carrying out a posttest. After treatment, different values or results were obtained to determine the effect of treatment on that group. The sampling technique used is non-probability sampling. The sampling technique chosen was saturated sampling. This technique is a sampling technique if all members of the population are used as samples (Yulifa, Yustiana and Nurdin, 2022).The sample for this research was fourth grade students at SD N 3 Menawan, Grobogan. The data collection technique in this research is tests. The data analysis technique for this research uses the normality test and paired sample t-test. The normality test is used to test whether the data from the pre-test and post-test are normal or not using the Shapiro Wilk formula with the help of SPSS. (Sugiyono, 2018) This research design can be described as follows.

Table 1: One Group Pretest-Posttest Design Research Design

Pre-test	Treatment	Post-test
O_1	X	O_2

Information:
O_1 = Pretest before treatment
O_2 = Posttest after treatment
X = Treatment

3. Results and Discussions

The research aims to obtain pretest and posttest results by applying the Problem Based Learning learning model. From this application, the following student learning outcomes were obtained.

Table 2: Student Learning Results

	Min	Max	Average
Pre-test	25	80	54
Post-test	70	95	84

The table shows that the class average score increased from 54 (pretest) to 84 (posttest). The value data will then be processed using the normality test to determine the normality of the data and the paired sample T-test as a hypothesis test.

3.1   Normality test

Table 3: Normality Test Pretest (Before Treatment) And Posttest (After Treatment)

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
before treatment	.135	23	.200*	.947	23	.251
after treatment	.192	23	.028	.915	23	.052

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The normality test is carried out to determine whether the research data is normally distributed or not. The normality test used is the Shapiro-Wilk Test of Normality because the number of samples is less than 50 (Windasari and Syofyan, 2019). Data is said to be normally distributed if the significance value α is > 0.05. Conversely, if the significance value α < 0.05 then the research data is not normally distributed. Based on the normality test using SPSS, the normality test results were obtained as follows. The pretest value has a significance value of 0.251 > 0.05 and the posttest value has a significance value of 0.052 > 0.05. From these two data, the significance value α is > 0.05, which means the data is normally distributed.

3.2   Paired Samples T-Test

The paired sample t-test is used to determine the hypothesis of a treatment or experiment. The hypothesis used is Ho, there is no influence of the problem based learning model on the results of learning Indonesian language traffic sign material for class IV SDN 3 Menawan and Ha there is an influence of the problem based learning model on the results of learning Indonesian language traffic sign material through class IV SDN 3 Menawan. With a significance value (α) of 0.05. The hypothesis is said to be successful if Ho is rejected with a significance value of α < 0.05.

Table 4: Paired Sample T-Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	before treatment - after treatment	-30.43478	19.65111	4.09754	-38.93256	-21.93701	-7.428	22	.000

The table above shows that the significance value α is 0.000 < 0.05. This means that Ho is rejected and Ha is accepted. It can be concluded that the application of the Problem Based Learning learning model has an influence on the learning outcomes of class IV students at SDN 3 Menawan.

The application of the Problem Based learning model is carried out by conducting a pretest before the treatment is carried out to determine the student's initial score. After the pretest, Problem Based Learning was implemented using traffic sign material. The provision of material is carried out according to the achievements and competencies of the learning outcomes to be achieved. After implementing the Problem Based Learning learning model, students are given a posttest to find out the final results after treatment. Obtaining data from pretest and posttest scores shows the influence of the Problem Based Learning learning model on student learning outcomes. The average score before and after treatment shows a difference where there is an increase in learning outcomes from the Problem Based Learning model treatment.

Based on the results obtained, the effect of implementing the Problem Based Learning learning model on class IV students at SD N 3 Menawan. It can be seen that the average learning outcomes have increased from 54 (pretest) to 84 (posttest). Obtaining data from pretest and posttest scores shows that there is a difference, an increase in learning

outcomes after treatment with the Problem Based Learning learning model, indicating an influence and improvement in learning outcomes compared to the previous learning model. The hypothesis test carried out showed that the significance value from the Paired Sample T-test showed that α 0.000 < 0.05, which means that Ho was rejected and Ha was accepted. This means that the treatment of the Problem Based Learning learning model has an influence on Indonesian language learning outcomes for class IV students.

These findings are in line with research conducted by Yolanda, Winarni and Yulisetiani (2022); Adelia and Syafriani (2020) that the problem-based learning model assisted by articulate storyline media is more successful than using the discovery learning model so that the choice of learning model and media influences the success of learning. In this way, articulate storyline media has the advantage of increasing interaction between activities in the learning process, making it easier to design learning media and running it because it has various features that can support making the media more interesting so that this media can present more creative learning. Problem based learning model assisted by articulate storyline 3 media had an effect on the science learning outcomes of water cycle material for class V students at SDN Kapasan III/145. This is proven by the results of calculating the post-test t-test value of tcount > ttable, namely 3.038 > 2.052 and sig. (2-tailed) of 0.004 < 0.05. This shows that Ha is accepted and there is a significant influence of the problem-based learning model assisted by articulate storyline 3 media on the science learning outcomes of water cycle material for class V students at SDN Kapasan III/145.

4. Conclusion

Based on research that has been carried out in the application of the Problem Based Learning learning model assisted by Merantas media, it has an influence on the Indonesian language learning outcomes of class IV students at SD N 3 Menawan. There are quite significant differences between the application of Problem Based Learning and conventional learning models. This difference can be seen from the results of the pretest and posttest before and after the treatment of the Problem Based Learning learning model assisted by Merantas media. The average learning result from the pretest was 54 after implementation, the posttest results showed an increase, namely rising to 84. So it can be concluded that the Problem Based Learning learning model assisted by Merantas media has a significant influence on Indonesian language learning outcomes for fourth grade students at SD N 3 Menawan.

Acknowledgement

Conflict of Interest

The authors declare no conflicts of interest.

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