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LEARNING MODEL PROBLEM-BASED LEARNING IN INCREASING LEARNING CONCENTRATION OF ELEMENTARY SCHOOL STUDENTS IN INTEGRATED THEMATIC LESSONS REVIEWING FROM LEARNING OUTCOMES

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Abstract
This study aims to determine how the learning outcomes of the Problem-Based Learning (PBL) learning model increase the concentration of elementary school students on integrated thematic subjects. The experimental method is used for research. The mean post-test value for the experimental class is 83.80 percent and the mean post-test for the control class is 78.80 percent, indicating that student learning outcomes are visible. The experimental class has a gain index g greater than 0.69, while the control class has a gain index g greater than 0.59. The results of the t-test indicate that Sig and t-count (4.388) are greater than T-table (2.052). 2-tailed) 0.05 or 0.014, indicating that students at SDN Hikmah II Yapis, Jayapura City, Papua Province are more concentrated in learning integrated thematic subjects thanks toProblem-Basedd Learning model.

Keywords: PBL model; learning concentration; integrated thematic; learning outcomes

Abstrak
Penelitian ini bertujuan untuk menentukan bagaimana hasil penerapan model pembelajaran *Problem Based Learning* (PBL) dapat meningkatkan konsentrasi siswa sekolah dasar pada pembelajaran tematik. Metode yang digunakan dalam penelitian adalah metode eksperimental. Nilai rata-rata postes kelas eksperimen adalah 83,80 persen dan rata-rata posttest untuk kelas kontrol adalah 78,80 persen, menunjukkan bahwa terdapat perbedaan hasil belajar siswa. Kelas eksperimental mendapatkan indeks g lebih besar dari 0,69, sementara kelas kontrol mendapatkan indeks g lebih besar dari 0,59. Hasil dari uji t-test menunjukkan bahwa Sig dan t-count (4,388) lebih besar daripada T-table (2,052). 2-tailed) 0,05 atau 0,014, menunjukkan bahwa para siswa di SDN Hikmah II Yapis, kota Jayapura, provinsi Papua lebih berkonsentrasi dalam mempelajari mata pelajaran dalam tematik dengan penggunaan model *Problem Based Learning*.

Kata kunci: model PBL; konsentrasi belajar; tematik terintegrasi; hasil belajar

INTRODUCTION

Examining the current circumstances, the national education system is facing various challenges that are crucial for the preparation of competitive human resources for the global age. Therefore, education is required as a reasonable effort to prepare human resources, capable of building high-quality human resources and being professional in their field. This conforms to Law No.20 of 2003 on the National Education System states that education is a deliberate and planned effort to create a learning environment and process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, and noble character, in addition to the skills required by himself, society, the nation, and the state. The government has

attempted to implement reforms to enhance the quality of education at various levels, and learning curricula in order to achieve the national education objectives.

Curriculum 2013 is a current curriculum in Indonesia related to integrative topic-based learning (Owaifeer et al., 2018). Integrated teaching is a teaching approach that combines/combines different competencies from different subjects on different topics (Hidayah, 2015). In the meantime, according to Indriyani (2019), the current revisions to the curriculum from 2013 are an effort to enhance educational process delivery.

Integrated thematic learning is learning that can be given to students according to meaningful experiences, and focuses on students so that students are researched in depth, are meaningful ,and have various concepts of their own. Integrated thematic learning allows students to explore and process the information obtained because learning is *student-centered*, while the teacher only supports during the learning process so that students are proactive in learning.

However in reality, when compared to other nations around the worldIndonesia's education system is still of very poor quality. When contrasted with the findings of the 2015 PISA study, the ranking of PISA in Indonesia decreased in 2018. While the results of the 2015 TIMSS conducted every 4 years show that the average score is 397 out of 49 countries and is ranked 44th. Based on direct observations of the classroom's thematic learning process, it was found that the low number of students achieving optimal learning outcomes was caused by several things, (1) the lack of student attention to the subject matter provided so that students were unable to solve problems both individually and in groups, (2) The teacher's approach to education is either less creative or does not meet the needs of the students' learning as well as the materials they use. Because of this, a teacher's ability to develop an efficient and purposeful learning model is crucial because it has a direct impact on the student’s learning outcomes.

The learning process in the classroom will be very meaningful if students experience what they are going to learn. One of the things that can be done to get maximum results is to ensure that all students concentrate on the subject matter being taught. The concentration of students on the material is very important to determine how much students absorb the information provided. Students who put their attention on learning will use higher-order thinking processes when studying the materials, allowing them to thoroughly absorb and comprehend it.

The model PBL is a learning model based on constructivism that accommodates direct student involvement and is able to solve student problems during the learning process and is one that can keep students focused on learning (Arends, 2012). The Problem-Based Learning model is a method of education in which students use the scientific method to solve a problem in order to acquire knowledge and problem-solving skills (Farida et al., 2019; Ningsih et al., 2018; Permatasari et al., 2019). The Problem-Based Learning model makes students able to identify problems, find causal relationships, and apply concepts that are appropriate to the problem (Rais & Suswanto, 2017). This process is carried out by students through discussion so that they can express opinions and ideas in their groups (Malmia et al., 2019). Students are happier as a result, which makes learning more meaningful (Fauzia, 2018; Masykurni et al., 2017). Feelings of pleasure in learning can generate interest and foster motivation to learn so that it will give a deep impression of what is being learned (Sumitro et al., 2017). Additionally, students will retain the acquired knowledge for a very long time.

A teacher is said to be creative, professional, and fun if he has a variety of concepts and techniques to explore the quality of teaching (Nofriyanti & Nurhafizah, 2019; Rosmawati et al., 2020). According to Tan (2003), PBL is an innovation in the learning process because it gives students the ability to empower, hone, test, and develop their thinking skills on an ongoing basis. This is accomplished through a structured group or teamwork process. Because every teacher has the freedom to choose and use various learning models according to the needs and the subject's characteristics matter to be taught (Nugraha et al., 2021). A learning model serves as an instrument that helps and facilitates students in obtaining a number of learning experiences (Jayul & Irwanto, 2020; Saputro & Rahayu, 2020). There are various techniques that can be done to advance the quality of education, one of which is by increasing learning capacity (Puyada & Putra, 2018).

The goal of the teaching model is to serve as a guide for teachers to use in the classroom to teach (Jayul & Irwanto, 2020; Supardi, 2022). On the other hand, the learning model also aims to serve as a guide for learning designers and educators when it comes to carrying out teaching and learning activities in a way that ensures that learning objectives are appropriately met (Abarang & Delviany, 2021; Handayani, 2021; Tabroni et al., 2022).

Another research related to learning concentration has been carried out by Setyani (2018), revealed that subject A had high learning outcomes that met 6 indicators of learning concentration but did not meet 3 learning concentrations, earning a score of 58.82 and being categorized as having a moderate level of concentration; subject B had moderate learning outcomes that met 7 indicators of learning concentration but did not meet 2 indicators, earning a score of addition. Asriningtyas et al. (2018) found that previous research had shown that students' critical thinking and problem-solving skills could be enhanced by using the Problem-Based Learning model Furthermore, the Problem-Based Learning model has the potential to enhance scientific attitudes and learning outcomes among students (Nelli et al., 2016). The PBL model has also been shown to significantly improve student learning outcomes and improve communication skills (Budhi et al., 2018).

The author is interested in conducting a study titled "The Effect of Problem-Based Learning (PBL) Learning Models to Increase Learning Concentration of Elementary School Students on Integrated Thematic Subjects Judging from Learning Outcomes" because it is possible to conclude in accordance with the problems that have been described and the findings of the earlier research, that concentration is very important in the learning process. Additionally, the PBL learning model is able to assist teachers in increasing student learning concentration.

METHOD

This study's methodology is a quantitative quasi-experimental research design Non-Equivalent Control Group Design is the one that was used. This study included up to 30 students from SD Hikmah II YapisJayapura City, Papua Province, who were all in class IV A and IV B. While the entire of this study's sample consisted of fourth-grade students, the technique used in sampling was using *Non-Probability Sampling* with a saturated sample/total sample technique. The location that became the focus of the research was SD Hikmah II Yapis, Jayapura City, Papua Province.

The procedures in this study are: 1) carrying out observations throughout class IV, 2) making observations in class during learning, 3) in accordance with the results obtained from direct observation, the next step is to determine the sample/research focus, in the experimental class and control class using the sample total technique, 4) compiling a grid of test questions based on the existing grid, 5) testing the instrument as a test instrument for learning outcomes in class IV in different schools to analyze the level of validity, reliability, and discriminating power of the questions. After doing the test using the validity test and reliability test, it was obtained 15 items that were categorized as valid. Valid questions will be tested on students who will serve as the control class and the experimental class (*pretest*) 6) carry out learning using a PBL in the experimental class, 7) re-evaluate/posttest for both classes, 8) analyze the research results, 9) compiling research results.

Observation, tests, and documentation as data collection methods. Multiple-choice questions and observational instruments were used as the data collection instrument, and descriptive and inferential data analysis were used as the data analysis techniques analysis (*Gain* and *T-test*) using *SPSS version 24*.

RESULTS AND DISCUSSION

Results

Pretest Learning Result Data

Pretest learning outcomes data in the control class and experimental class show the emergence of a level of income value that is almost in the integrated thematic learning outcomes. None of the students in the two classes achieved the school's standard score in integrated thematic subjects, which is 70, This demonstrates that a problem-based learning model has never been utilized in integrated thematic subjects, particularly at SD Hikmah II Yapis, Jayapura City, Papua Province. Figure 1 depicts the pretest learning outcomes of students in the experimental class and the control class.

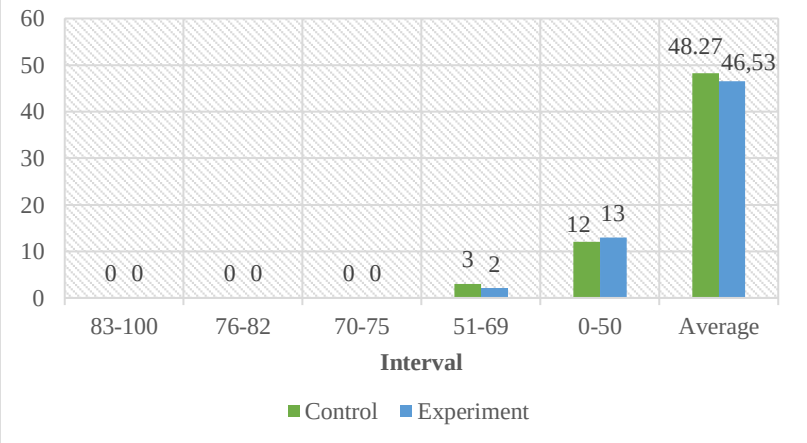

Figure 1. Distribution of Control Group and Experimental Group Pretest Frequency

Figure 1 demonstrates, based on the current score of 70, that students in two classes have poor or incomplete pretest learning outcomes. In the experimental class, the lowest score is 25, while in the control class, the highest score is 60, and the lowest score is 20.

Learning Outcomes Data The Posttest

The calculation posttest between the control class and the experimental class showed a very significant disparity. Giving treatment as much as 3 times was able to produce learning outcomes in both classes. The learning outcomes are shown in Figure 2.

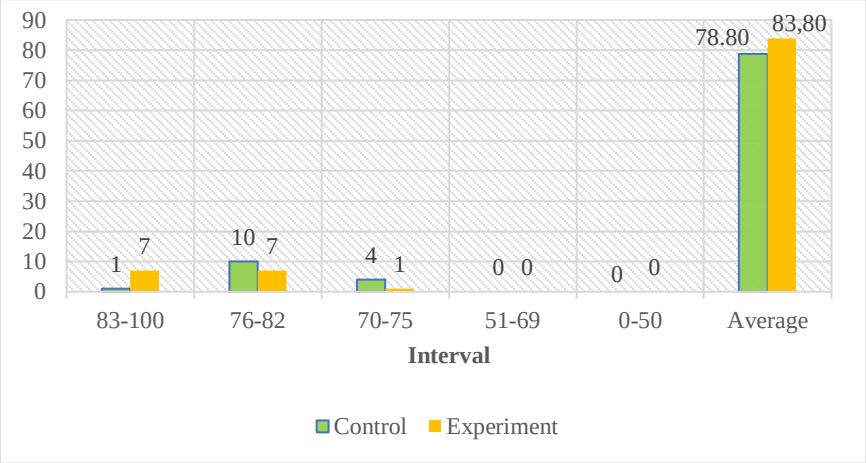

Figure 2. The Experimental Group and the Posttest Control Group's Frequency Distribution

According to the learning outcomes of the two classes, shown in diagrams 1 and 2, the control class and the experimental class, students' concentration on the learning process has a significant impact on their learning outcomes. Additionally, it has been demonstrated by the acquisition of the mean pretest score of 46.53 for the experimental class and 48.27 for the control class. However, after being treated differently in each class, where the control class used the lecture learning model and the experimental class used the PBL model, it was observed that student learning outcomes improved. The control class's previous average score of 48.27 rose to 78.80, while the experimental class's score of 46.53 rose to 83.80

Hypothesis Testing

Before testing the hypothesis, the initial step taken is to carry outa the prerequisites test namely the normality test and the homogeneity test of the initial data (pretest) and the final data (posttest)

Initial Data Normality Test (Pretest)

Referring to the table of results of the calculation of the normality test of the pretest value data for the control class and the experimental class with the help of *SPSS For Windows Version 24.0*, shows that the *pretest* in both classes is normally distributed. It is displayed in Table 1.

Table 1. Initial Data Normality Test (Pretest)

Tests of Normality							
	class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistics	df	Sig.	Statistics	df	Sig.
Student Learning Outcomes	Pretest Control	.155	15	.200*	.915	15	.162
	Experimental Pretest	.141	15	.200*	.926	15	.240
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

The Asymp values are shown in table 1 above Sig. (2-tailed) exceeded the 0.05 significance level in both classes, namely 0.200in the experimental class and 0.200 in the control class. As a result, either the data are normally distributed or the valid hypothesis H_0 is accepted and H_a is rejected.

Initial Data Homogeneity Test (Pretest)

The homogeneity of the pretest of the control class and the experimental class at SD Hikmah II Yapis, Jayapura City, Papua Province was determined in accordance with the calculation table using SPSS Version 24.0's Analyze-Compare Means-Oneway Anova learning outcomes pretest. Table 2 displays the results of these calculations.

Table 2. Test of Homogeneity of Initial Data (Pretest)

Test of Homogeneity of Variances Student Learning Outcomes			
Levene Statistics	df1	df2	Sig.
.112	1	28	.741

Table 2 demonstrates that the two classes are identical. The uniformity is demonstrated by the value of Sig. of 0.741> 0.05. Based on this, it is possible to draw the conclusion that H0 is accepted and Ha is rejected. More specifically, the variance between the experimental group and the control group is the same, even though the learning outcomes of the students in the two classes are different but the data distribution is the same.

Final Data Normality Test (Posttest)

Based on the table of results of the calculation of the normality test of the *posttest* the control class and the experimental class with the help of *SpssFor Windows Version 24.0* data *posttest* in both classes were normally distributed. The test results can be seen in Table 3**.**

The value of asymp is shown in Table 3. Sig. (2-tailed) exceeds the 0.05 significance level in both classes, with 0.177 in the control class and 0.200 in the experimental class. Because of this, it is possible to draw the conclusion that the data are normally distributed while the valid hypothesis H_0 is rejected.

Table 3. Final Data Normality Test (Posttest)

Tests of Normality							
	Class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistics	df	Sig.	Statistics	df	Sig.
Student Learning	Outcomes Control Posttest	.185	15	.177	.909	15	.130
	Experimental	Posttest .157	15	.200*	.925	15	.226
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

Homogeneity Test of the Final Data (Posttest)

The identical posttest results for the experimental class and the control group class at SD Hikmah II Yapis, Jayapura City, Papua Province, as shown in the table, were calculated using SPSS Version 24.0 by Analyze-Compare Means-OnewayAnova the learning outcomes for both classes the same. The test results can be seen in the following Table 4.

Table 4 Final Data Homogeneity Test (Posttest)

Test of Homogeneity of Variances Student Learning Outcomes			
Levene Statistics	df1	df2	Sig.
2.862	1	28	.102

Table 4 shows that the two classes are the same. The homogeneity of 0.102 > 0.05 is indicated by the value of sig. Therefore, it is possible to draw the conclusion that H_0 is accepted and H_a is rejected, namely that the control group and the experimental group share the same variance despite the different learning outcomes in the two classes and the homogeneous data distribution.

The prerequisite test, which was carried out with the assistance of SPSS Version 24.0, demonstrates that all of the obtained data are uniform and normally distributed. As a result, the next step is to test the hypothesis. The normalized gain test and the two-party test (T-test) are the hypothesis tests used.

The purpose of hypothesis testing is to ascertain whether there is a significant difference in the learning outcomes of students in the experimental class and the control class following treatment.

The hypothesis with the following conditions. If the value of *Sig. (2-tailed) < 0.05* then H_0 is rejected and H_a is accepted. If the value of *Sig. (2-tailed)> 0.05* then H_a is rejected and H_0 is accepted.

Test Gain

Students' progress toward achieving learning outcomes is evaluated using the gain test. The gain test measures the gap between the pre- and post-test scores. The data used is data that has

been taken from the posttest minus the pretest in the two classes studied. Furthermore, the value is calculated to get the gain index (g).

Table 5 Results Gain Test

No	Class Type	Value *Mean*		<g>	Gain Category
		Pretest	***Posttest***		
1	Control	48.27	78.80	0.59	Medium
2	Experiment	46.53	83.80	0.69	Medium

The gain index for the control class was determined to have a value of 0.59, which places it in the medium range, according to Table 5. The experimental class's gain index had a value of 0.69, which placed it in the medium category. Despite the fact that the gain was the same in both the control class and the experimental class, the experimental class achieved a value that was higher than that of the control class. This demonstrates that the increase in the experimental class is greater than that in the control class.

Two-Party Test (T-Test)

The t-test is used if it has obtained the output gain score data. The purpose of testing using the t-test is to see a significant difference in the Problem-Based Learning model in increasing the concentration of elementary school students learning in thematic learning in terms of learning outcomes. The t-test is used for support from SPSS for windows version 24.0 namely Analyze-Compare Means-Independent TTest. The t-test for equality of means can show the results if the value of Sig is set to 2-tailed) 0.05. If the significance is greater than 0.05, there is no difference in learning outcomes between the control and experimental classes. Table 6 displays the T-test's findings. Ha is accepted and Ho is rejected if the significance level is less than 0.05, there is a difference in learning outcomes between the control group and the experimental group.

Table 6. T-Test Results

Independent Samples Test										
		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
									95% Confidence Interval of the Difference	
		F	**Sig.**	**tdf**	**Sig**	**. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**Lower**	**Upper**
Student Learning Outcomes	**Equal variances assumed**	2.862	.102	-2.627	28	0.014	-5.00000	1.90338	-8.89890	-1.10110
	Equal variances not assumed			-2.627	26.925	.014	-5.00000	1.90338	-8.90592	-1.09408

It is possible to draw the conclusion that the two classes are identical or have the same variance based on the presentation of Table 6. Levene's t-test for the equality of variances column displays homogeneity with a Sig (2-tailed) value of 0.05, which is 0.014.

The t-value calculated obtained from table 6 is -2.627. The difference is 5,000 and the difference ranges from -8.89890 to -1.10110 (see *lower* and *upper*). For the t_{table} itself, the result is 2.048. With this, it can be concluded that t_{count} (2.627) >t_{table} (2.048). That is, Problem-Based Learning was able to increase the concentration of elementary school students learning in thematic learning, as evidenced by Ho's rejection and Ha's acceptance.

Discussion

In all teaching conditions, the learning model is very influential on the conditions and student learning outcomes. Therefore, educators must comprehend and master the teaching model in order to effectively control and manage their classes, including involving students in the classroom teaching process. Notably, problem-based learning purposefully combines cognitive and metacognitive teaching and learning (Aker et al., 2018).

Model PBL is an effective learning model applied in elementary schools. As explained by Sanjaya, the main characteristic of a PBL learning model is that students do not only listen to lectures and memorize but are focused on students' activities in thinking, communicating, processing data, and concluding. Furthermore, Amir (2009) also explained some of the benefits of the Problem-Based Learning (PBL) model, namely making students more active and increasing their understanding of teaching materials, increasing focus on relevant knowledge, encouraging thinking, building soft *skills*, building learning skills, and motivating student development. This is in line with the theory that has been initiated by (Rusmono, 2012), PBL learning stimulates the learning process with optimal learning outcomes. In addition, the PBL learning process went well, the PBL learning stages provoked the concentration level of students to actively participate in the teaching process. This finding is related to research (Setyowati, 2010), PBL learning is able to increase student learning participation and in accordance with the theory proposed by (Aunurrahman, 2009), the learning process can occur well if students actively participate in it.

Students have the opportunity to actively participate in classroom activities when using the PBL learning model. This activity is indicated by the student's responses to the problems at hand. So that students have full concentration in solving problems. The characteristics of the Problem-Based Learning (PBL) learning model, namely (1) learning starts from a problem, (2) ensuring that the problems given are related to the real world of learners, and (3) organizing learning related to problems not only in scientific disciplines (Rusman, 2012).

The learning stages measure the degree to which students' concentration levels in the classroom learning process differ from learning with conventional learning models using the PBL learning model. In this study, the students are given the task of solving the problem, while the instructor serves as director and supervisor. Students are trained using this model to solve problems on their own and in groups, allowing them to actively build their learning, especially in integrated thematic learning. Students' concentration on learning is very low in the conventional learning model.

This study's successful use of the PBL learning model corroborates the findings of previous research (Sri Wahyuni & Indri Anugraheni, 2020), which obtained the same findings on the results of hypothesis testing using the T-test. If the value of sig (2-tailed) is 0.000 0.05 and the results of T_{count} are 4.388 >T_{table} 2.052, then H_0 is rejected, indicating that there are differences in

addition, the fact that both scores in this study were below 0.05 and had a value of sig (2-tailed) = 0.014 indicates that Problem-Based Learning has a positive and significant effect on increasing the concentration of elementary school students in integrated thematic subjects resulting knowledge.

CONCLUSION

The research data analysis that has been carried out, concluded that the Problem-Based Learning (PBL) learning model has a positive and significant effect on increasing the learning concentration of elementary school students in integrated thematic subjects *Gain* and T-test. Some of the limitations of the researcher that were found directly in the research process were that the data collection process was only carried out in 2 classes, so the researchers could not be generalized to a wider population.

Several suggestions for future research are based on the study's findings; increasing the research period to get more accurate research results because of the learning styles of students in different classes, and exploring students' learning problems that cause students to lose concentration in the learning process.

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