



## THE EFFECT OF TRI HITA KARANA-BASED PROBLEM-BASED LEARNING MODEL ON ECOLOGICAL ATTITUDES AND LEARNING OUTCOMES

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### PENGARUH MODEL PEMBELAJARAN BERBASIS MASALAH BERBASIS TRI HITA KARANA TENTANG SIKAP EKOLOGIS DAN HASIL PEMBELAJARAN

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#### ABSTRACT

**Abstract:** This paper discusses the effect of Tri Hita Karana-based problem-based learning model on ecological attitudes and natural science (IPA) learning outcomes. The research type is a quasi-experimental with non-equivalent post-test-only control group design. The research population is 135 students, while the research sample is 61 students. The sampling technique used cluster random sampling techniques. Data collection methods were questionnaires and tests. Data on ecological attitudes were collected by questionnaire, while data on students' natural science (IPA) learning outcomes were collected by natural science (IPA) learning outcomes test. The data analysis used was Manova. Based on the research that has been conducted, it is concluded that 1) there is a significant effect of the Problem-Based Learning model based on Tri Hita Karana on students' ecological attitude, 2) there is a significant effect of Tri Hita Karana-based Problem-Based Learning model on students' natural science (IPA) learning outcomes, and 3) simultaneously, there is a significant effect of Tri Hita Karana-based Problem-Based Learning model on students' ecological attitudes and natural science (IPA) learning outcomes.

**Keywords:** *problem-based learning, tri hita karana, ecological attitudes, natural science (IPA) learning outcomes*

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**Abstrak:** Artikel ini membahas pengaruh model pembelajaran berbasis masalah berbasis Tri Hita Karana terhadap sikap ekologis dan hasil belajar IPA. Jenis penelitian adalah eksperimen semu dengan rancangan *non-equivalent post-test-only control group*. Populasi penelitian adalah 135 siswa, sedangkan sampel penelitian adalah 61 siswa. Teknik pengambilan sampel menggunakan teknik *cluster random sampling*. Metode pengumpulan data adalah metode angket dan metode tes. Data sikap ekologis dikumpulkan dengan angket, sedangkan data hasil belajar IPA siswa dikumpulkan dengan tes hasil belajar IPA. Analisis data yang digunakan adalah *Manova*. Berdasarkan penelitian yang telah dilakukan, disimpulkan bahwa: 1) terdapat pengaruh yang signifikan model pembelajaran berbasis masalah berbasis Tri Hita Karana terhadap sikap ekologis siswa, 2) terdapat pengaruh yang signifikan model pembelajaran berbasis masalah berbasis Tri Hita Karana terhadap hasil belajar IPA siswa, dan 3) secara bersama-sama terdapat pengaruh yang signifikan model pembelajaran berbasis masalah berbasis Tri Hita Karana terhadap sikap ekologis dan hasil belajar IPA siswa.

**Kata Kunci:** *pembelajaran berbasis masalah, tri hita karana, sikap ekologis, hasil belajar IPA*

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#### INTRODUCTION

Science learning students' ecological attitudes and science learning outcomes are provided from an early age. In learning science, students are required to be active in examining

natural events that occur in the environment around students. Therefore, in learning science students not only learn theoretically, but also through practices that are able to apply the principles of science in everyday life. The purpose

of learning science in elementary schools according to the 2013 curriculum is to enable students to think scientifically, reasonably and critically. Furthermore (Astawan IG et al, 2020) states that the learning objectives of science in elementary school are: 1) gain confidence in the greatness of God Almighty, 2) develop and apply in everyday life useful science concepts, 3) develop curiosity, positive attitudes and awareness of the relationship between science, environment, technology and society, 4) develop process skills to solve problems and make decisions about the natural environment, 5) increase awareness to maintain and preserve the natural environment, 6) increase awareness to appreciate nature with all its order, and 7) gain the provision of science knowledge, concepts and skills to continue to junior high school.

To achieve the goals of science in primary schools, of course, education is needed that is able to optimise the potential of students and also in accordance with the demands of the times. The 21st century is currently known as the century of knowledge as the main foundation for various aspects of life. The 21st century learning paradigm emphasizes that education is in the knowledge age with an accelerated increase in rich knowledge (Yuni et al., 2016). (Mokhamad, 2022) stated that this paradigm emphasises the ability of students to think critically, be able to connect science with the real world, master information technology, communicate and collaborate. The achievement of these skills can be achieved by applying appropriate learning methods in terms of mastery of material and skills. In the 21st century, education is becoming increasingly important to ensure that students have the skills to learn and innovate, skills to use technology and information media, and can work and survive by using life skills.

Based on the results of a review of previous research that has been carried out, it was found that science learning in elementary schools has not been maximally in accordance with the objectives of science learning that have been stated above. This is in accordance with what was conveyed (Safira, 2020) which stated that the

results of the science learning outcomes test in class III State Primary School Buluh 3 Socah showed that the percentage of completeness was 17%, namely there were only 5 students out of 30 students who passed above the Minimum Completion Criteria. This shows that student learning outcomes are low. Furthermore (Alim et al., 2020) also stated that science learning in class VI State Primary School Socah 2 Bangkalan most of the learning still applies conventional learning and methods lack variety, so that student interest in learning science is low. The learning process carried out by the teacher is only monotonous on the material in the book, without linking the learning material with the environment around students and local wisdom values around students.

The 21st century learning is expected not to leave the values of local wisdom around students. This is because education also aims to make students cultured and characterized human beings. One of the local wisdom that exists in the environment around students, especially in Bali, is the local wisdom of Tri Hita Karana.

Tri Hita Karana is a local wisdom of the Balinese people that is holistic. (Adnyana et al, 2020) stated that the image of a holistic environment in Balinese society is crystallized in the philosophy of Tri Hita Karana. This philosophy is not only the result of empirical abstraction of human relationships with the environment inspired by spiritual values but also implies human awareness of their existence which is very dependent on God, others, and the universe. Basically, the essence of the Tri Hita Karana teaching emphasizes three human relationships in life in this world. The three relationships include relationships with fellow humans, relationships with the surrounding nature, and relationships with divinity that are interrelated with one another.

In line with the concept of Tri Hita Karana, one of the attitudes that must be developed from an early age is an ecological attitude. An ecological attitude is an attitude of caring for the environment. (Dentith et al., 2022) suggest that ecological attitudes as the ability / attitude of humans to adapt to the ecological niche

where humans are. Ecological attitude is an ability or competence that students have in responding to the circumstances that occur around their environment and applying it in their daily lives.

This ecological attitude is important to grow from an early age so that students are embedded to love the surrounding environment. Especially in this era of globalization, public awareness of environmental sustainability is not good. This is evident from the many environmental damages that exist around human life, resulting in natural disasters in various regions. Therefore, this ecological attitude needs to be instilled in elementary school students.

Based on the observations made at elementary schools in Gugus 1 Pupuan District, Tabanan Regency, especially in class V, the learning process carried out by teachers tends to pay less attention to or integrate local wisdom around students. In addition, the learning process carried out by teachers seems less innovative and does not provide opportunities for students to solve problems they face in the learning process.

Especially during this pandemic, the learning process tends to be one-way monotonous, namely the teacher only gives assignments that only demand students' cognitive in learning. In addition, the intensity of student activeness in learning is also low. This is reflected in the few students who ask questions in the learning process given by the teacher. The tasks that tend to demand cognitive and the low active participation of students in learning certainly greatly affect student learning outcomes. This is evidenced by the average daily test score of students which is 65.16, so that the average is still below the KKM set by the school which is 70.

Apart from having an impact on learning outcomes, learning during the pandemic in class V SD Gugus 1 Pupuan District Tabanan Regency also had an impact on students' low ecological attitudes. The problem of students' low ecological attitudes occurs due to the lack of development of student interactions in their daily lives, be it interactions with fellow friends or with the surrounding environment. Whereas the

surrounding environment is a very important thing that must be preserved.

One of the efforts that teachers can make in maximizing the learning process and making learning more innovative and meaningful for students is by applying the Problem Based Learning model. The Problem Based Learning model is a learning model that provides opportunities for students to learn through problems given by the teacher (Maghfiroh et al., 2016). In this situation, students are required to be active, creative, and develop their reasoning to master the material provided by the teacher. This learning process will certainly make students more excited and feel challenged in learning.

The application of the Problem Based Learning model is effective in the student learning process. This statement is supported by the results of research conducted by (Nugroho et al., 2018), in their research showing that the Problem Based Learning model is more effective than conventional learning models.

In more maximizing this model, the Problem Based Learning model can be combined with Tri Hita Karana local wisdom. This is so that, in addition to aiming for students to be smart in the material, students can also later become cultured students and have characters who are able to apply their knowledge to benefit the surrounding environment.

Tri Hita Karana local wisdom has also been used in previous studies, namely research (Billy et al., 2019), and (Jaya & Asri, 2020). In their research it was found that the local wisdom of Tri Hita Karana was effectively combined with learning models that could be applied in the world of education. So that in this study it is an appropriate step to combine the Problem Based Learning model with Tri Hita Karana local wisdom.

In learning that applies the Tri Hita Karana-based Problem Based Learning model, the learning process will begin with problems that occur in the student's environment, both problems related to relationships between humans, humans and nature, and humans and God. In the learning process, students not only solve the problems

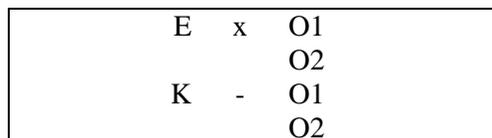
given by the teacher, but also later students are equipped with local wisdom values, so that students are able to maintain and preserve the local wisdom. This learning process will make learning more meaningful for students so that students' science learning outcomes will be optimally improved.

This research was conducted in class V elementary school in Gugus 1 Pupuan Subdistrict, because in class V elementary school in Gugus 1 Pupuan Subdistrict, problems were found in accordance with the observations described above. Where in class V it was found that the learning process had not been carried out optimally, and students' science learning outcomes had not reached the KKM set by the school, namely 70. So, the title taken in this study is about the Influence of Tri Hita Karana-based Problem Based Learning Model on Ecological Attitudes and Science Learning Outcomes. This study aims to determine the influence of Tri Hita Karana-based problem-based learning model on ecological attitudes and science learning outcomes.

## RESEARCH METHODS

### Type of research

This research uses a type of quasi-experimental research. Quasi experiment is a research that requires an experimental class and a control class, but it is not possible to take research subjects randomly from the existing population. This is because the subjects (students) have naturally formed in one group (one class). This is in accordance with the opinion of (Pancane et al., 2022) which states that this form of research, often used intact groups, such as classes that cause randomization cannot be done. In addition, this type of research is used because not all experimental variables and conditions can be strictly controlled. This research was conducted in the fifth grade of elementary school in Pupuan Village, Pupuan District, Tabanan Regency. The quasi-experimental design used was a non-equivalent posttest only control group design, the pattern of which can be seen in Figure D.1 below



**Figure 1. Research design**

### Description:

- E : experimental class (learning by using learning model Problem Based Learning model based on Tri Hita Karana)
- K : control class (conventional learning)
- O1 : ecological attitude posttest
- O2 : posttest of science learning outcomes

### Research Population

The population in this study were all the fifth grade elementary school students in Gugus 1

Pupuan District, Tabanan Regency for the 2021/2022 academic year. In Pupuan Village there are eight elementary schools, namely State Primary School 1 Pupuan, State Primary School 2 Pupuan, State Primary School 1 Bantiran, State Primary School 2 Bantiran, State Primary School 3 Bantiran, State Primary School 1 Sai, State Primary School 2 Pajahan and State Primary School 3 Pajahan. The population distribution is as follows.

**Table 1. Distribution of the Research Population**

No	School	Number of Students
1	State Primary School 1 Pupuan	28
2	State Primary School 2 Pupuan	12
3	State Primary School 1 Bantiran	21
4	State Primary School 2 Bantiran	13
5	State Primary School 3 Bantiran	13
6	State Primary School 1 Sai	18
7	State Primary School 2 Pajahan	13
8	State Primary School 3 Pajahan	17
Total		135

### Research Sample

The sampling technique in this study used cluster sampling and random techniques. Cluster sampling activities are carried out in classes that have been formed in each school, so researchers will not change the existing classes in schools. Given that randomization will be carried out, then before determining the control class and experimental class randomly, a class equality test will be carried out. Based on the results of the class equality test, only classes that are equal will be selected randomly using the lottery technique.

The class equality test uses a t-test using SPSS-20.00 for windows software. The test criterion is if the calculated significance is less than 0.05, the class is declared unequal, while if the calculated significance is greater than 0.05, the class is declared equal. If the classes are declared equal, then the class can be selected as the class used for research. However, if the class is not equal, then the class cannot be used in this study. The equality test using the t-test was conducted 28 times to analyze the equality of classes in each school in this population.

**Tabel 2. Research Sample**

No	School	Number of Students	Description
1	State Primary School 3 Bantiran	13	Experiment
2	State Primary School 1 Sai	18	Experiment
3	State Primary School 2 Pajahan	13	Control
4	State Primary School 3 Pajahan	17	Control

In this study, four classes were selected as research samples because the number of students in each school was not too much, and the results of this study really gave a complete picture of the influence of the Tri Hita Karana-based Problem Based Learning model on ecological attitudes and science learning outcomes of the fifth grade students in Gugus 1 Pupuan District, Tabanan Regency.

The experimental classes in this study were the fifth grade students of State Primary School 3 Bantiran and the fifth grade students of State Primary School 1 Sai, while the control classes were the fifth grade students of State Primary School 2 Pajahan and the fifth grade

students of State Primary School 3 Pajahan. In this research activity will be carried out as many as 8x meetings. The procedure for this research is as follows.

### Preparation Stage

The steps taken at this stage are:

- Determining the school used as a research site.
- Visiting the selected school and asking permission from the principal to conduct the research.
- Observing class V elementary school in Gugus 1 Pupuan Sub-district, Tabanan Regency. Determining the research sample from the available population randomly.

- d. Developing and designing learning tools such as lesson plans, worksheets, and research instruments.
- e. Consulting lesson plans, worksheets and research instruments with homeroom teachers and supervisors.
- f. Validating the research instruments.

### **Implementation Stage**

- a. Provide learning treatment to the experimental class and control class for 8 X meetings. Students in the experimental class were given learning with the Tri Hita Karana-based Problem Based Learning of learning model, while in the control class the learning process was like ordinary learning provided by the teacher every day (convention).
- b. Giving a post-test at the end of the meeting, both for the experimental class and the control class.

### **Final Stage**

- a. Analyze the research data to test the hypothesis proposed.
- b. Discussion, interpretation, drawing conclusions and compiling reports.

### **Research Instruments**

#### **Data Collection Method**

Data collection methods are techniques or ways that can be used to collect data. The choice of data collection method depends on the nature of the object and data source (Makbul, 2021). Data collection in this study used the test method. The data collected in this study are data on student learning outcomes in science subjects in grade V elementary schools in Gugus 1 Pupuan, Pupuan District, Tabanan Regency. The data collection methods used in this study were the test method and questionnaires / surveys. The test method is a way of obtaining data in the form of a task that must be done by a person or group of people being tested. (Dudung, A 2018) states that "a test is a way to conduct an assessment in the form of a task that must be done by a child or group of children so as to produce a value about the child's

behavior or achievement". The data collected in this study are data on science learning outcomes using instruments in the form of multiple choice tests, each item of which adapts to the test grid.

According to (Makbul, 2021) the questionnaire / questionnaire method is a way of obtaining or collecting data by sending a list of questions or statements to respondents or research subjects. The use of questionnaires will be appropriate if: 1) Respondents (people who respond or who answer questions) are far apart; 2) Involving a number of people in the system project, and it is useful to know what proportion of a particular group approves or disapproves of a particular feature of the proposed system; 3) Conducting a study to find out something and want to seek all opinions before the system project is given certain instructions; 4) Want to believe that problems in the existing system can be identified and discussed in follow-up interviews. In accordance with the method, the instrument used in this research is an essay test question sheet.

#### **Data Collection Instrument**

Research instruments are tools used to collect data in order to solve research problems or achieve research objectives. This study uses two types of instruments based on the nature of the data sought. The instrument lattice is made by considering the characteristics of each data, the preparation of the lattice is arranged to ensure the completeness and validation of the instrument. Before the instrument was used, judgment experiments were first carried out by two experts to get good quality questionnaires and tests.

#### **Prerequisite Test**

Assumption testing is carried out to determine whether the available data can be analyzed parametrically or not. In relation to the statistics used for data analysis in this study, the assumption tests carried out include the normality test of data distribution, the variance homogeneity test and the correlation test between dependent variables.

### Normality Test of Data Distribution

Normality testing is carried out to ensure that the sample comes from a normally distributed population, so that hypothesis testing can be carried out. The data normality test in this study used SPSS 20.00 Kolmogorov-Smirnov statistical test at significance 0,05. This test was carried out on posttest data, changes in posttest scores for the experimental group and control group.

### Variance Homogeneity Test

The homogeneity test of variance on the learning outcomes test used the Levene Statistical Test, with the help of the SPSS 20.00 for windows computer program. Data is said to have a homogeneous variant if the probability value is greater than 0.05.

### Correlation Testing between Related Variables

The correlation test was conducted to determine the level of correlation between Y1 (ecological attitude) and Y2 (learning outcomes). The test was conducted using the product moment test with a significance level of 5%. If the test

results show that the two dependent variables are not correlated, then the analysis can proceed to hypothesis testing using multivariate analysis. But if the two dependent variables Y1 and Y2 are correlated, then the analyzes for hypothesis testing is continued using other analyzes.

## RESULTS AND DISCUSSION

### Research Results

#### 1. Hypothesis Testing Prerequisite Test

##### a. Normality Test of Data Distribution

Normality testing is carried out to ensure that the sample comes from a normally distributed population, so that hypothesis testing can be carried out. The data normality test in this study used SPSS 20.00 Kolmogorov-Smirnov statistical test at 0.05 significance. This test was carried out on posttest data, changes in posttest scores for the experimental group and control group. The results of the normality test of the data distribution in this study are presented in table 3 as follows

**Table 3. Summary of Normality Test Calculations**

Group		Kolmogorov-Smirnov(Sig.)	Description
Ecological attitude	Experiment	0,200	Normal
	Control	0,140	Normal
Science learning outcomes	Experiment	0,075	Normal
	Control	0,141	Normal

Based on the normality test above, it can be concluded that all data groups in this study are normally distributed.

##### b. Variance Homogeneity Test

The homogeneity test of variance on the learning outcomes test used the Levene Statistical

Test, with the help of the SPSS 20.00 for windows computer program. Data is said to have a homogeneous variant if the probability value is greater than 0.05. Based on the analysis that has been done, the results are obtained in accordance with table 4 and table 5 as follows.

**Table 4. Summary of Calculation  
Test of Homogeneity of Variance Together**

Box's M	0,851
F	0,273
df1	3
df2	649994,239
Sig.	0,845

**Table 5. Summary of Separate Variance Homogeneity Test Calculations**

Variabel	F	df1	df2	Sig.
Ecological attitude	0,988	1	59	0,324
Science learning outcomes	0,401	1	59	0,529

Based on the homogeneity test above, the significance value is obtained together or separately above 0.05, so it can be concluded that all groups of data are homogeneous.

#### a. Correlation Test between Related Variables

The correlation test was conducted to determine the level of correlation between Y1 (ecological attitude) and Y2 (learning outcomes).

The test was conducted using the product moment test with a significance level of 5%. If the test results show that the two dependent variables are not correlated, then the analysis can proceed to hypothesis testing using multivariate analysis. But if the two dependent variables Y1 and Y2 are correlated, then the analysis for hypothesis testing is continued using other analysis. The results of the correlation test analysis in this study can be seen in table 4.13 below.

**Table 6. Correlation test between Dependent Variables**

Group	Value rcount (Pearson's Correlation)	Significance level (sig.)	Decision
Experiment	0,148	0,428	Not significant
Control	0,034	0,859	Not significant

The table above shows that the rcounts of 0.148 and 0.034 have a significance value of 0.428 and 0.859 or greater than 0.05 (sig.>0.05). This indicates that the relationship or correlation between the dependent variables is not significant or that there is no correlation between the dependent variables. Therefore, the MANOVA test is feasible.

#### 1. Hypothesis Testing

Because the three prerequisite tests have been met, the MANOVA hypothesis test can be carried out. The MANOVA test is used to test whether there are differences in several dependent variables between several different groups. To test the first and second hypotheses, it can be seen from the Test of Between-subjects Influence Table from the calculation results with the help of the SPSS application. A summary of the results of this analysis can be seen in table 4.14 below.

**Table 7. Summary of First Hypothesis Test**

Dependent Variable	Source	JK	Df	RJK	F	Sig.
Ecological attitude	Inter	2979,023	1	2979,023	142,460	0,000
	Inner	1233,763	59	20,911		
	Total	953841	61			

Table 7 above shows that the dependent variable ecological attitude has an F value of 142.460 with a significance value of 0.000 or smaller than 0.05. This indicates that the F value on the dependent variable of ecological attitude is significant. Because it is significant, it means that there is a difference in ecological attitudes

between the PBL learning model and the conventional learning model so it is concluded that there is an influence between the Tri Hita Karana-based Problem Based Learning of learning model on the ecological attitudes of fifth grade students of state elementary schools in Gugus 1 Pupuan District, Tabanan Regency.

Dependent Variable	Source	JK	Df	RJK	F	Sig.
Science learning outcomes	Inter	239,886	1	239,886	44,372	0,000
	Inner	318,967	59	5,406		
	Total	30215	61			

From table 8, it can be seen that the dependent variable of science learning outcomes has an F value of 44.372 with a significance value of 0.000 or smaller than 0.05. This shows that the F value on the dependent variable of science learning outcomes is significant. This means that there is a difference in science learning outcomes between the Problem Based Learning learning model and the Conventional learning model. Therefore, it can be concluded that there is a significant influence of Problem Based Learning model based on Tri Hita Karana on science learning outcomes of the fifth grade elementary

school students in Gugus 1 Pupuan District, Tabanan Regency.

This study also differentiated ecological attitudes and science learning outcomes for students who followed the Tri Hita Karana-based Problem Based Learning model with groups of students who followed conventional learning. The decision was taken with the analysis of Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root whose analysis was carried out with the help of SPSS. The results of hypothesis analysis for this study can be seen in table 9 as follows.

**Table 9. Third Hypothesis Testing**

Statistic	F Value	Significance Level (sig.)	Conclusion
Pillai's Trace	85,004	0,000	Significant
Wilks' Lambda	85,004	0,000	Significant
Hotelling's Trace	85,004	0,000	Significant
Roy's Largest Root	85,004	0,000	Significant

The analysis results showed that the F price for Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root is 85.004 and has a significance value smaller than 0.05. Therefore, the F price for Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's

Largest Root is significant. So, it can be concluded that there is a significant influence of Problem Based Learning model based on Tri Hita Karana on ecological attitudes and science learning outcomes of grade V elementary school

students in Gugus 1 Pupuan District Tabanan Regency.

#### **DISCUSSION OF RESEARCH RESULTS**

##### **There is a Significant Influence of Tri Hita Karana-based Problem Based Learning Model on Ecological Attitudes of Grade V Students in Gugus 1 Pupuan District, Tabanan Regency.**

Based on hypothesis testing I, it was found that there is a significant influence of the Tri Hita Karana-based Problem Based Learning model on the ecological attitudes of fifth grade of elementary school students in Gugus 1 Pupuan District, Tabanan Regency, with an Fcount of 142.460 and a significance of 0.000.

The results of this study are in line with the results of research conducted by (Djuandi, 2016) with the title "The Influence of Problem-Based Learning on Student Attitudes to the Environment (Quasi Experimental Study on Geography Subjects at State Senior High School 1 Purwadadi)". In his research, it was concluded that there was a significant influence of problem-based learning on students' attitudes towards the surrounding environment. (Nugroho et al., 2018) stated that the Problem Based Learning of learning model or problem-based learning is a learning approach based on real-world problems as a context for students to learn about critical thinking and problem solving skills, as well as to gain essential knowledge and concepts from or subject matter. This opinion is also reinforced by (Gunawan et al., 2017) who argued that the Problem Based Learning learning model is a teaching model that has the characteristics of real problems as a learning context for students which aims to hone critical thinking skills and problem solving skills in order to gain knowledge.

As stated by the experts above, the Problem Based Learning of learning model is very suitable to be combined with Tri Hita Karana local wisdom. That is because the Problem Based Learning model will be implemented more meaningfully, because it will be combined with local wisdom in the environment around students, so this will strengthen the essence of the Problem Based

Learning model. The learning process that applies the Tri Hita Karana-based Problem Based Learning model makes the learning process more enjoyable for students. It is because students learn to combine learning materials with the environment around students. This learning process will minimize students' abstract thinking in the learning process, so students will more easily understand the material they learn.

In addition, the application of the Tri Hita Karana-based Problem Based Learning model will also be able to shape student character. Students will be given positive values that can be instilled in them, so that students are able to establish a harmonious life between others, between students and the environment / nature, and between students and God.

The learning process by linking the material with the environment around students will certainly make students love their surrounding environment more. Students will know how the impacts that occur if the surrounding environment is not maintained. Students will also be able to know how to preserve the environment around them. Therefore, indirectly the learning process by applying the Tri Hita Karana-based Problem Based Learning of learning model will be able to foster and improve students' ecological attitudes.

Based on the explanation above, it can be concluded that there is a significant influence of the Tri Hita Karana-based Problem Based Learning model on the ecological attitudes of the fifth grade of elementary school students in Gugus 1 Pupuan District, Tabanan Regency.

##### **There is a Significant Influence of Tri Hita Karana-based Problem Based Learning Model on Science Learning Outcomes of Grade V Students in Gugus 1 Pupuan District, Tabanan Regency.**

Based on hypothesis II testing, it was found that there is a significant influence of Tri Hita Karana-based Problem Based Learning model on the science learning outcomes of grade V elementary school students in Gugus 1 Pupuan

District Tabanan Regency, with Fcount of 44.372 and significance of 0.000.

The influence of the Tri Hita Karana-based Problem Based Learning learning model on student learning outcomes was also found in previous research. The research was conducted by (Rosdiana, 2019) with the title "The Influence of Problem Based Learning Model (PBL) on Scientific Attitudes and Student Learning Outcomes on Psychotropic Submaterial". In his research it was concluded that PBL had a significant influence on students' scientific attitudes with an influence size of 0.470 which was moderate. And PBL also has a significant influence and moderate influence on learning outcomes, the influence size is 0.331.

The advantages of the Problem Based Learning of learning model according to (Nugroho et al., 2018), namely: 1) can help students how to transfer knowledge to understand problems in real life, 2) is a pretty good technique to better understand the content of the lesson, 3) can challenge students' abilities and provide satisfaction to find new knowledge for students, 4) it can help students to develop their new knowledge and take responsibility for their learning, 5) it can increase students' learning activities, 6) it can be shown that every subject is basically a way of thinking and something that students understand not just learning from teachers or from books, 7) it can develop students' ability to think critically and develop their ability to adapt new knowledge. 8) can develop students' interest in continuing to learn even though learning in formal education has ended, 9) learning is seen as more exciting and favored by students, and 10) can provide opportunities for students to apply the knowledge they already have in the real world.

In learning that applies the Tri Hita Karana-based Problem Based Learning model, the learning process will begin with problems that occur in the student's environment, both problems related to relationships between humans, humans and nature, and humans and God. In the learning process, students not only solve the problems given by the teacher, but also later students are

equipped with local wisdom values, so that students are able to maintain and preserve the local wisdom. This learning process will make learning more meaningful for students so that students' science learning outcomes will be optimally improved.

Referring to the description above, it can be concluded that there is a significant influence of Problem Based Learning model based on Tri Hita Karana on the science learning outcomes of the fifth grade elementary school students in Gugus 1 Pupuan District, Tabanan Regency.

**Simultaneously, there is a significant influence of Tri Hita Karana-based Problem Based Learning Model on Ecological Attitude and Science Learning Outcomes.**

Based on hypothesis III testing, it was found that together, there was a significant influence of Tri Hita Karana-based Problem Based Learning model on ecological attitudes and science learning outcomes of grade V elementary school students in Gugus 1 Pupuan District, Tabanan Regency, with F count of 85.004 and significance of 0.000.

The purpose of learning science in elementary school according to the 2013 curriculum is to enable students to think scientifically, reasonably and critically. To achieve the goal of science in elementary school, of course, education is needed that is able to optimize the potential of students and also in accordance with the demands of the times. The 21st century learning is also expected not to leave the values of local wisdom around students. This is because education also aims to become human learners with culture and character. One of the local wisdom that exists in the environment around students, especially in Bali, is the local wisdom of Tri Hita Karana.

The Tri Hita Karana-based Problem Based Learning model is a combination of learning models that can be applied in elementary schools with local wisdom around students. The combination of learning models with local wisdom around students makes the learning process more meaningful for students. That is

because, in the learning process students not only learn the material in the student book, but students are also able to learn about the values of local wisdom around students. This learning process will certainly have a positive impact on the development of ecological attitudes and improving students' science learning outcomes.

Based on the explanation above, it can be concluded that together, there is a significant influence of Tri Hita Karana-based Problem Based Learning of learning model on ecological attitudes and science learning outcomes of fifth grade elementary school students in Gugus 1 Pupuan District, Tabanan Regency.

## CONCLUSIONS AND SUGGESTIONS

Based on the research that has been conducted, it can be concluded as follows.

- 1) There is a significant influence of Tri Hita Karana-based Problem Based Learning of learning model on students' ecological attitude with Fcount of 142.460 and significance of 0.000.
- 2) There is a significant influence of Tri Hita Karana-based Problem Based Learning model on students' science learning outcomes with F count of 44.372 and significance of 0.000.
- 3) Simultaneously, there is a significant influence of Tri Hita Karana-based Problem Based Learning learning model on ecological attitudes and students' science learning outcomes with Fcount of 85.004 and significance of 0.000.

## Suggestion

Based on the research that has been done, some suggestions can be conveyed as follows.

- 1) Students are advised to always develop their ecological attitudes, so that the sustainability of the environment around students can be maintained. In addition, students are expected to always develop all the potential that exists in themselves, so that student learning outcomes at school can be improved.
- 2) Teachers are advised to develop their competence, so that later they will be able to

design and implement innovative and fun learning for students.

- 3) Schools are advised to always provide a forum for school members to develop the resources owned by school members.
- 4) Other researchers are advised to develop this research by using more diverse variables, so that problems in the world of education can be minimized.

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