THE EFFECT OF PROBLEM BASED LEARNING AND GROUP INVESTIGATION LEARNING MODELS ON IPS LEARNING OUTCOMES

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Abstract. The aim of the study was to determine the difference in the effect of the Problem Based Learning and Group Investigation models on the interest and learning outcomes of Social Sciences Elementary School students in Region II, Barru District, Barru Regency. This type of research is pretest-posttest control group design. The number of samples in this study were 19 people, consisting of 15 people from the PBL class and 14 people from the GI class. The data collection method used was a learning achievement test to measure learning outcomes, a questionnaire to measure learning interest, and documentation. Data analysis techniques used are descriptive statistical approaches and inferential analysis, and hypothesis testing. The research results obtained were the Manova hypothesis test which was $0.189 > 0.05$ which means that H1 was rejected Ho was accepted, that is, there was no difference in the PBL and GI models on interest, and social studies learning outcomes for elementary school students Region II, Barru District, Barru Regency. So it can be concluded that learning using the PBL and GI learning models can influence the interest and learning outcomes of social studies class V students, Barru District, Barru Regency.

Keywords: Problem Based Learning learning model; Investigation Group; interest in learning, learning outcomes

I. INTRODUCTION

In essence, education is an activity or process carried out to humanize humans. Training is an effort to improve Human Resources (HR). This is in accordance with the meaning of education itself in the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System in Article 1 Paragraph 1, namely: "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students can actively develop their potential. himself to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by himself, society, nation and state.

Education is a very important aspect in human life. If the learning process is going well, the learning outcomes achieved by students will also follow [1]. Student learning outcomes are supported by student interests and learning activities. If the spirit of student learning increases, student performance is also very effective. When both work well, learning outcomes also increase [2]. Learning activities are both physical and spiritual activities, with learning activities connecting the two activities in such a way as to create optimal learning activities [3]. Learning requires activity. In essence, learning is an act in which students engage in activities to change behavior.

However, this is not in line with what happened in area II, Barru District, Barru Regency, especially in social studies class V, based on the results of observations made on October 24 2022, it was found that the achievement in each indicator of learning outcomes in the cognitive domain of students was still relatively low, however with an interest in learning the affective domain of students is also still relatively low. This is presumably due to students who have not fully or still have difficulty understanding the material, this can occur because the learning that takes place is still monotonous and less interesting. In the learning process the teacher still uses the lecture method which is classical and monotonous, so students tend to get bored and have no interest in learning. One of the

reasons this research was conducted on fifth grade elementary school students was because the material used was grade V material and this material was very suitable for the application of PBL and GI learning models.

The learning methods used before the implementation of the PBL and GI learning models were still not enough to give a deep impression on students, because the teacher's role in conveying material was more dominant than student activities. As a result, the ongoing learning becomes less effective and the time available becomes inefficient. So, we need a learning model that can make students take part in the learning process so that the learning process becomes more effective and efficient to improve and improve the quality of learning through improving the learning process.

Another learning model commonly used by teachers is the traditional learning model, which is also not very successful in increasing student interest, performance, and learning outcomes [4]. Therefore, it is necessary to use learning models that are applied to increase students' interest, performance, and cognitive learning outcomes. Until now, there have been many researchers who have developed learning using models to increase student learning interest and learning outcomes in learning in elementary schools, such as the use of Problem Based Learning and Group Investigation learning models.

Learning models that are easy to apply to increase student interest and learning outcomes are Problem Based Learning (PBL) and Group Investigation (GI) cooperative models. There are several reasons why it is necessary to apply a learning model between PBL and GI because this learning model will be more effective and very helpful in the learning process so that learning objectives will be easily achieved.

This learning model also provides useful information for students in the learning process, can increase students' willingness to learn, avoid boredom, and influence student interest and participation in the learning process. In addition, the learning model is very important because each learning model and personality has different characteristics and

learning habits of students. PBL is a learning model that fits the characteristics of students. This model can optimize all opportunities students have to actively participate in presenting, both mentally and physically. The application of the PBL learning model further enhances students' ability to understand each topic.

By using a problem-based learning model, it is hoped that students will be involved in the identification, analysis, and evaluation of problems carefully so that students can develop skills and improve cognitive learning outcomes [5]. Learning using the Problem Based Learning model is a learning model that challenges students to find solutions to real world problems, both alone and in groups [6]. Learning with a problem-based learning model is based on the principle that problems can be used as a starting point for acquiring new knowledge. The purpose of PBL is to challenge students to present problems and also to implement given and more complex problem-based learning, to increase student learning interest in expressions that can encourage student cooperation and group cohesion [7]. Guiding students and developing analytical patterns and can help students develop their thinking processes.

The PBL learning model is the Group Investigation (GI) model. The Group Investigation (GI) learning model is a collaborative learning model based on a constructivist paradigm, where students interact with large amounts of information and work with others in collaborative situations to solve problems, plan, present, and evaluate student work.

The GI strategy involves students from planning, both in determining topics and ways to learn through investigation [8]. This strategy also requires students to choose good skills in communication as well as in group process skills.

Interest has a strong influence on student learning outcomes [9]. When students are interested in learning, it inspires curiosity and joy in learning. Curiosity and the pleasure of learning can be stimulated by the material being taught and the way the teacher teaches the material, if the material and the way the teacher teaches the material is not in accordance with the interests of the students, then these students will not learn well and in accordance with the wishes of the students. maximum because he has no traction. He doesn't want to study, he doesn't get satisfaction from it. On the other hand, it is easier for students to remember and convey interesting learning material because interest increases learning.

Each student's learning interest is not the same in learning, so students who are interested in learning easily accept the teacher's teaching because their curiosity is high and they have a strong enthusiasm to achieve whatever they want [10]. While students who have little interest in learning are difficult to accept lessons, mostly because they do not want to know and do not pay attention to the material provided by the teacher, their learning outcomes are less than optimal.

Learning outcomes are the abilities and understanding that students gain after receiving subject matter and learning experiences when carrying out the learning process [11]. Students are said to have carried out learning when they have mastered and fully understood a deep problem. Learning outcomes can also be said as a form of material concepts that students have in themselves. Basically learning outcomes consist of three domains namely cognitive, affective, and psychomotor [9].

The cognitive domain is a domain related to student learning outcomes in the form of knowledge or intellectuality from the material being studied. The affective domain is the realm of learning outcomes related to student attitudes. Meanwhile, the psychomotor domain is the realm of learning outcomes related to skills for action which includes movement [12].

Good learning outcomes are very important for students to have as a form of achieving learning objectives. In addition, the learning abilities possessed by students can be used as provisions, because through learning, students can add and develop their attitudes to be able to become even better individuals. Thus the cognitive learning outcomes of students need to be known and improved [13]. So far the most common difficulty experienced by many students is to understand the subject matter, so that students' cognitive learning outcomes are still relatively low.

Whether or not these learning outcomes are good can also be determined by several factors. There are internal factors and external factors. Internal factors consist of physical, psychological, and physical maturity. While external factors consist of the social environment (family, school, community, and groups), culture, physical environment, and spiritual. One of the factors in the school environment that greatly influences is the selection of learning strategies which include the learning model used. This means that the teacher plays a very important role in determining the appropriate learning model in order to improve students' cognitive learning outcomes [9].

Based on the description of the background of the problems above, this study has the aim of knowing the effect of the GI and PBL learning models on students' interest and social studies learning outcomes. Thus, researchers are interested and feel the need to examine more broadly, regarding "The Influence of the Problem Based Learning and Group Investigation models on interest, and social studies learning outcomes for fifth graders of Elementary School Region II, Barru District, Barru District". The results of this research are expected to help teachers/educators in teaching and learning activities to be more effective and efficient and to be able to make students more active and have an interest in learning in the learning process so that they have high learning outcomes.

II. Research Methods

A. Types and Research Approaches

This research uses a quantitative type with an experimental approach. Through this method the researcher carried out treatment or treatment to students in increasing their interest and social studies learning outcomes. The experimental research used was a pretest-posttest control group design. In this study there were two groups which were then given a pretest and posttest in the PBL and GI groups. This random technique is used to determine the sample of the experimental class and the control class by means of a lottery. As for the samples in this study were two elementary schools.

B. Data Collection Techniques

The test that will be given is a written test to find out student learning outcomes using the Problem Based Learning learning model with group investigation. The test was first validated and given to students before the pretest and after the posttest treatment in both classes [14]. The validity of the instrument in this study consulted experts, in this case supervisors and competent validators by being asked for their opinions about the instruments that had been prepared. After the instrument has been consulted and meets the requirements, the next step is to conduct field trials. The results of the student test will be given a score according to the assessment criteria.

Questionnaires are used to determine the increase in student interest in learning. Questionnaire sheets for students' interest in learning to find out how students' learning interests are in using the Problem Based Learning model with Group Investigation

C. Data analysis technique

The data analysis technique used in this research is descriptive analysis and inferential analysis. For the purposes of testing the hypothesis, the basic test is first carried out, namely the normality test and the homogeneity test of variance.

III. RESEARCH RESULTS AND DISCUSSION

A. Research result

This research was conducted for 8 meetings at SDN 4 Barru, namely at the first meeting a pretest was carried out. From the second meeting to the seventh meeting, the learning process was carried out using the Problem Based Learning (PBL) learning model and in the eighth meeting, a posttest was carried out to find out the effect of the PBL learning model on the interest and learning outcomes of social studies class V students. For SDN 11 Barru, the number of meetings was eight times. namely the first meeting by conducting a pretest to determine the initial abilities of class V students from the second meeting to the seventh meeting, learning was carried out using the Group Investigation (GI) learning model, the eighth meeting was carried out a posttest to determine the final abilities of class V students on social studies learning interests and outcomes.

This study used two schools, each using a different learning model to determine the effect of the learning model used on the interests and learning outcomes of fifth grade students in Barru District, Barru District.

a. Descriptive Analysis

Here is the statistical data of interest in learning SDN 11 Barru and SDN 4 Barru class V.

Table 1 Statistical Data Interest in Learning for PBL and GI classes

Statistics

		PBL interest in learning	GI is interested in learning
N	Valid	15	14
	Missing	0	1
Mean		89.80	84.71
Std. Error of Mean		1.813	1.424
Median		93.00	86.00
Mode		93ª	89
Std. Deviation		7.022	5.327
Variance		49.314	28.374
Range		25	15
Minimum		73	76
Maximum		98	91
Sum		1347	1186

a. Multiple modes exist. The smallest value is shown

Statistical data on interest in learning in the PBL class can be seen in the table above, that the minimum score is 73 and the maximum score is 98 and for the minimum score in the GI class is 76 and the maximum score is 91, for the total mean value in the PBL class is 89.80 and in GI class the mean value is 84.71. With the conclusion that the use of PBL and GI learning models can increase interest in learning science in grade V students

After being given an interest in learning questionnaire, students were given tests to find out student learning outcomes in the PBL class and GI class. The test is given after the students are given treatment using the PBL and GI learning models. The following is statistical data on class V student learning outcomes.

Table 2. Statistical data on learning outcomes for PBL and GI classes

Statistics

		PBL learning outcomes	GI study results
N	Valid	15	14
	Missing	0	1
Mean		85.33	82.07
Std. Error of Mean		1.430	1.714
Median		82.00	82.00
Mode		82	82
Std. Deviation		5.538	6.415
Variance		30.667	41.148
Range		18	22
Minimum		77	73
Maximum		95	95
Sum		1280	1149

Statistical data on learning outcomes in the PBL class can be seen in the table above, that the minimum score is 77 and the maximum score is 95 and for the minimum score in the GI class is 73 and the maximum score is 95, for the total mean value in the PBL class is 85.33 and in GI class the mean value is 82.07. With the conclusion that the use of PBL and GI learning models can improve science learning outcomes in fifth grade students.

c. Normality test

The normality test is used to determine whether classes using the PBL and GI learning models come from populations that are normally distributed or not. Before testing the hypothesis,

a normality test was carried out to determine whether the two models were normally distributed or not. In this study, the One Sample Kolmogorav-Smirnov test was used using a significance level of 5% or (Sig.) > 0.05.

Table 3 Normality Test Data

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		14
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	6.59879201
Most Extreme Differences	Absolute	.163
	Positive	.163
	Negative	-.161
Test Statistic		.163
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Based on the normality test above, in class GI. Based on the normality test using SPSS 25 with the One-Sample Kolmogorov-Smirnov Test based on the Unstandardized Residual of the dependent variable affecting the independent variable, the Asymp value is obtained. Sig. (2-tailed) of 0.200 is greater than 0.05, it can be concluded that this study has a normal distribution. Thus, the assumptions or requirements for virginity are normally distributed.

d. Homogeneity Test

Homogeneity test is carried out to test whether the samples have the same variance. To find out whether the two samples are homogeneous or not, it is necessary to test the homogeneity of the variance first with a significant level of $\alpha = 5\%$.

Table 4 Homogeneity Test Data

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Say.
Unstandardized Residual	Based on Mean	1.708	4	6	.266
	Based on Median	.730	4	6	.603
	Based on Median and with adjusted df	.730	4	2.000	.648
	Based on trimmed mean	1.628	4	6	.282

Based on the results of data analysis on learning outcomes, it was found that homogeneity with a significance value of 0.282 was greater than 0.05 which indicated that the GI

learning model for student learning outcomes was homogeneous with a statistical leverage of 1.628.

e. Hypothesis testing

In the Manova hypothesis test, the decision is made with the following criteria: If the value of Asymp.Sig (2-Tailed) <0.05, then there is a significant influence, which means that H1 is accepted and Ho is rejected. And if the value of Asymp.Sig (2-Tailed) > 0.05, then there is no significant effect, which means that H1 is rejected Ho is accepted

Hypothesis testing using the Statistical Package for Social Science (SPSS) version 25 program, namely One-way Multivariate Analysis of Variance (One-way MANOVA) through multivariate significance tests and univariate significance tests (Tests of Between Subjects-Effects). After testing the normality and homogeneity tests for each variable, a hypothesis test can be carried out to determine the differences in the effect of the PBL and GI learning models on learning interest and student learning outcomes.

Table 5 Hypothesis Testing

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Say.
Intercept	Pillai's Trace	.998	3300.276[b]	2.000	13.000	.000
	Wilks' Lambda	.002	3300.276[b]	2.000	13.000	.000
	Hotelling's Trace	507.735	3300.276[b]	2.000	13.000	.000
	Roy's Largest Root	507.735	3300.276[b]	2.000	13.000	.000
model	Pillai's Trace	1.084	1.184	28.000	28.000	.329
	Wilks' Lambda	.204	1.128[b]	28.000	26.000	.380
	Hotelling's Trace	2.492	1.068	28.000	24.000	.438
	Roy's Largest Root	1.620	1.620[c]	14.000	14.000	.189

a. Design: Intercept + model
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Based on the table above using the SPSS v.25 test for decision making that the significant value is 0.189 > 0.05, which means that H1 is rejected Ho is accepted, that is, there is no difference in the Problem Based Learning and Group Investigation models on the interests, activities and learning outcomes of social studies elementary students Region II Barru District Barru Regency.

B. Discussion;

This fifth hypothesis test can explain the influence of the PBL and GI learning models on increasing interest and learning outcomes of fifth grade students, from tests found in the field and analyzed using SPSS v.25 that the two models have an influence on student interest and learning outcomes , if it is known that the value of interest and student learning

outcomes is better than the value of interest and student learning outcomes using the GI learning model.

Both of these learning models have a position that each student likes as seen from learning activities in class which are more fun and activate students but have different values even though the two models can increase student interest and learning outcomes. Schools that apply the PBL learning model and the GI model get the same treatment, that is, they both carry out the process for eight meetings, but the learning process is different with each application of learning syntax according to the characteristics of each learning model.

The use of the PBL learning model and the GI learning model, which has been studied previously by [15], [16], and [17] which shows that there are differences in learning outcomes in students who use the Problem Based Learning learning model with the learning outcomes of students who use conventional learning models, there are differences in the learning outcomes of students who use the Group Investigation cooperative learning model with the learning outcomes of students using conventional learning models, and there are differences in student learning outcomes using the Problem Based Learning learning model with the learning outcomes of students using the Group Investigation cooperative learning model.

The learning model above uses two learning models in which each class conducts experiments, namely the experimental class and the control class to find out the comparison of the results from the application of the two models, while the novelty in this study is that researchers use class V as a research object and it is also carried out in Barru district. . This research was also without conducting a control class, but these two learning models were carried out using direct experiments without using a control class. In this study it further increased the interest and learning outcomes of PBL rather than increasing the value of interest and learning outcomes of GI. Although the two learning models can influence social studies interest and learning outcomes in fifth grade students, Barru District, Barru District.

IV. CONCLUSION

Based on the results of the research and discussion above, it can be concluded as follows: Differences in the effect of the Problem Based Learning and Group Investigation models on the interest and learning outcomes of social studies students in SD Region II, Barru District, Barru Regency. The manova hypothesis test is $0.189 > 0.05$, which means that H1 is rejected Ho is accepted, that is, there is no difference in the Problem Based Learning and Group Investigation models on the interests, activities and learning outcomes of social studies students in SD Region II, Barru District, Barru Regency.

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