DIFFERENCES IN THE EFFECT OF PROBLEM-BASED LEARNING AND DISCOVERY LEARNING MODELS ON ECONOMIC LEARNING RESULTS

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ABSTRACT

This research aims to determine the differences in the effect of problem-based learning and discovery learning models on economic learning result. This research method is quasi-experimental research. The results showed that the sig. (2-tailed) is 0.005 or less than 0.05, then according to the basis of decision-making, it can be concluded that there are differences in the influence of problem-based learning and discovery learning models on economic learning result. According to the comparison of the average learning results of the two groups of students based on the learning model, it can be stated that students who study with the problem-based learning model have better learning result than students who study with the discovery-learning model.

KEYWORDS: Discovery Learning, Economic Learning Results, Problem Based Learning,

INTRODUCTION

Education is an important aspect of human life. This is in line with the statement of Alpian et al (2019) which states that education is the most important thing in human life, this means that every Indonesian has the right to receive it and is expected to always develop in it. Education in the current era requires that the learning process is student-centered. In line with the statement of Philip and Jiafang (2013) which revealed that teachers and students are faced with new challenges, namely implementing and developing new approaches to learning, namely student-centered approaches which are able to improve students' abilities.

Based on data from the education center, it is known that the UNBK results in economics subjects in 2019 show that the results of studying economics are still not satisfactory. The average result can be seen from the average score of economics subjects in the national scope, only getting 52.56. Ngawi Regency is one of the districts that has not yet received satisfactory economic value. Whereas in economics subjects which only gets 55.90. The results of interviews conducted with several economics teachers also revealed that students' economic learning results were still low. In each class, only about 35% to 60% of students are able to absorb the material being taught.

Many affect the low results of studying economics in schools. Thobroni (2015: 28) reveals the factors that influence student learning results. Personal sectors include growth or maturity factors, intelligence, training, motivational, and individual and social factors, including family factors, family atmosphere and circumstances, teacher factors and teaching methods, and tools factors used in teaching and learning activities. Egok (2016) also revealed the factors that influence learning results: internal factors, which include intelligence, critical thinking skills, motivation, health, learning methods, and independent learning. External factors include the family environment, school environment, and community environment.

This phenomenon is likely due to the inaccuracy of the learning model used, thus making students quickly bored and passive. The selection of learning models must be made appropriately. In planning to support the implementation of learning, the teacher have to pay close attention to the choice of models, even the selection of teaching media needs attention (Purnasari & Sadewa, 2020). Born et al. (2017) revealed that the learning model is a method or plan used by the teacher during the learning process.

Choosing the right learning model for your lessons improves student quality, learning results, skills, activities, and more. The learning model used is tailored to the student's needs. In other words, a learning model that allows students to actively participate in the learning process. The learning models chosen by researchers are problem-based learning and discovery-based learning models. This learning model follows constructivist theory. In the learning process, students should be able to develop their skills. Teachers act only as facilitators and motivators.

Problem-based learning is a learning model that harnesses the variety of intelligences needed to face real-world challenges and the ability to deal with all new and existing complexities (Rusman, 2017: 336). Problem-based learning is an active, collaborative, student-centered learning process that develops the problem-solving and independent learning skills needed to meet the challenges of life and careers in today's increasingly complex environment.

Batubara (2020) also revealed that discovery learning is a learning in which students discover concepts that are learned with the direction and guidance of the teacher to achieve the goals previously set by the teacher. The discovery learning model invites students to discover what is learned and then construct that knowledge by understanding its meaning (Kristin, 2016). In other words, in the discovery learning model and problem-based learning, the teacher acts as a facilitator.

This research was conducted to determine the differences in the effect of problem-based learning and discovery learning models on economic learning results. Therefore, researchers compiled a study entitled "differences in the influence of problem-based learning and discovery learning models on economic learning results."

RESEARCH METHOD

This study uses a quantitative approach with a quasi-experimental research type. Quasi-experimental research is research where researchers cannot correctly control the independent variables or cannot control all relevant output variables (Budiyono, 2019:96). When the research was conducted in the odd semester of the 2022/2023 academic year.

This study's population was all class XI Social Sciences students at State Senior High Schools in Ngawi Regency. The samples in this study were SMA Negeri 2 Ngawi, which included students in class XI IPS 1, XI IPS 2 and SMA Negeri 1 Jogorogo, which included classes XI IPS 2 and XI IPS 4. Students in class XI IPS 4 (SMA Negeri 1 Jogorogo) and students in class XI IPS 1 (SMA Negeri 2 Ngawi) total 71 students as an experimental class. They will be treated with problem-based learning models. Class XI IPS 2 (SMA Negeri 1 Jogorogo) and students in class XI IPS 2 (SMA Negeri 2 Ngawi) total 71 students as the control class and will be treated with discovery learning models. The data collection technique in this study was in the form of a test. The instrument used in this study was in the form of multiple-choice items totaling 20 questions. Data analysis techniques used are descriptive statistics and inferential statistics. Inferential statistics are used to test hypotheses.

RESULTS

The research was conducted at SMA Negeri 1 Jogorogo and SMA Negeri 2 Ngawi. The material used in this study is Employment. The following is the research data.

1. **Descriptive Analysis**

Table 1. Description of the Value of Learning Results

Statistic	Whole Sample
N	142
Mean	73,80
Median	75
Modus	75
Std. Deviation	10,601
Quartile Deviation	15
Range (Min – Max)	45 (50 – 95)

(Source: Primary data processing 2022)

Based on table 1 it is known that all students have an average score of 73.80 learning results with the same median and mode of 75. The lowest score is 50 and the highest score is 95 so there is a difference (range) in value of 45.

Next will be presented a descriptive analysis of economics learning results based on the experimental class and the control class.

Table 2. Description of the Value of Learning Results Based on the Learning Model

Statistic	Experiment class (*Problem Based Learning*)	Control class (*Discovery Learning*)
N	71	71
Mean	76,27	71,34
Median	75	70
Modus	75	70
Std. Deviation	9,700	10,953
Quartile Deviation	15	15
Range (Min – Max)	35 (60 – 95)	40 (50 – 90)

(Source: Primary data processing 2022)

Table 2 above shows that experimental class students have an average learning result score of 76.27 with the same median and mode of 75. Control class students have a moderate learning result score of 71.34 with the same median and mode of 70. Third, The size of the statistical concentration shows that students who study with the problem-based learning model have higher learning results than students who study with the discovery learning model.

2. Hypothesis Test

Before testing the hypothesis, the normality test and homogeneity test were first carried out

Table 3. Normality Test Results

Group	Sig.	Infor
Experiment Class	0,068	Normal
Control Class	0,176	Normal

Based on table 3 it is known that the normality test for all groups produces a significance value (Sig.) > 0.05. Thus, it can be concluded that the data is normally distributed. Next, a homogeneity test will be carried out. Following are the results of the homogeneity test.

Table 4. Hasil Uji Homogenitas

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Learning Result	Based on Mean	1.130	1	140	.290
	Based on Median	1.081	1	140	.300
	Based on Median and with adjusted df	1.081	1	138.335	.300
	Based on trimmed mean	1.166	1	140	.282

Based on table 4, it is known that the homogeneity test produces a significance value (Sig.) > 0.05. Thus, it can be concluded that the data is homogeneous. After the normality test and homogeneity test were carried out, then the hypothesis test was carried out using the t-test. The following is the result of the hypothesis test.

Table 5. Calculation Results Test the hypothesis

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Learning Results	Equal variances assumed	1.130	.290	2.839	140	.005	4.92958	1.73633	1.49676	8.36240
	Equal variances not assumed			2.839	137.982	.005	4.92958	1.73633	1.49632	8.36284

Based on the results of hypothesis testing in the table above, it shows that the sig. (2-tailed) is 0.005 or less than 0.05, then according to the basis of decision-making, it can be concluded that there are differences in the influence of problem-based learning and discovery learning models on economic

learning results. According to the comparison of the average learning results of the two groups of students based on the learning model, it can be stated that students who study with the problem based learning model have better learning results than students who study with the discovery learning model.

DISCUSSIONS

Based on the analysis results, it can be obtained that the statistical test produces a significance value (Sig.) of 0.005 and a significance value of <0.05. This means that there are differences in the effect of applying problem-based learning and discovery learning models to economic learning result. Students treated with the problem-based learning model had a higher average learning results than the intermediate learning results treated with the discovery learning model. The average learning results of students treated with problem-based learning models were 76.27, while the middle students treated with discovery learning models were 71.34. Based on these results, the problem based learning model is more effective than the discovery learning model.

The problem-based learning model affects economic learning results. This model is influential because with the application of this model, students' learning results in economics increase. Janah et al. (2018) revealed that the problem-based learning model encourages students to build their own knowledge, cultivate higher skills, train student independence, and increase student self-confidence. Furthermore, Janah et al. (2018) revealed that the application of the problem-based learning model makes students think more than memorize, understand lessons better through discussion, and able to increasing student learning results.

The problem-based learning model is applied to the experimental class. Students who can understand the subject matter well will produce good learning results. The success of the problem-based learning model is consistent with constructivism theory and the results of previous research. In constructivism theory, students must actively think and construct concepts to understand something they are learning. The problem-based learning model is instrumental in the learning process because it can make students more active in the classroom and impact their learning results. Results of research conducted by Ariyani & Kristin (2021); Paradina et al. (2019); state that applying the problem-based learning model effectively improves learning results.

The discovery learning model is a model in which the learning process is not given in its entirety but instead involves students in organizing and developing knowledge and problem-solving skills (Yuliana, 2018). It was further explained that applying the discovery learning model could improve individual discovery abilities. In addition, initially, passive learning conditions become active and creative. The discovery learning model is used for the control class. The discovery learning model has several weaknesses. First, this model raises the assumption that the mind is ready to learn. Students who lack cognitive ability will experience difficulties. Second, this model needs to be more efficient in teaching many students. Third, the application of the discovery learning model can be disrupted if students and teachers are familiar with the learning models that are commonly used.

Based on the analysis results, the economic learning results in the problem-based learning model are higher than the financial learning results in the discovery learning model. This study's results align with Oktaviani et al. (2018), which state that the problem-based learning model has a good impact on student learning results compared to the discovery learning model. This learning model allows students to think actively and creatively in participating in the learning process

CONCLUSION

There are differences in the impact of applying problem-based and discovery-based learning models to economic learning results. You can tell this from the signature. Retention is 0.005. After comparing the average learning results of the two groups of students using the learning model, students learning with the problem-based learning model had better learning results than those learning with the discovery-based learning model. Therefore, problem-based learning models are more effective than discovery-based learning models.

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