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The Effect of Applying the Learning Cycle Learning Model on Students' Learning Outcomes of Geography

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ABSTRACT

Purpose of the study: The aims of this study were: 1) To compare the results of learning Geography of students using the Learning Cycle 7E learning model, Learning Cycle 5E with the Expository. 2) Comparing the results of learning Geography of students using the Learning Cycle 7E learning model with the Expository. 3) Comparing the results of learning Geography of students using the Learning Cycle 5E learning model with the Expository. 4) Comparing the results of learning Geography of students using the Learning Cycle 7E learning model with Learning Cycle 5E.

Methodology: This study uses a Quasi-Experimental method with a "Postest-Only Control Design". The study population was students of class XI senior high school social sciences department. The samples were selected using the cluster random sampling technique, namely class XI social sciences 5, XI social sciences 7, and XI social sciences 8. Data on learning outcomes were collected through tests with description questions. Data analysis used One Way Analysis of Variance (One Way Anova) and post-ANOVA test (Scheffe' method) with a significance level of 5%.

Main Findings: The results of the study showed: (1) There were differences in learning outcomes for Geography students using the Learning Cycle 7E, Learning Cycle 5E, and Expository learning models, with an average score of 73.37 : 66.55 : 58.92 respectively. The results of the one-way ANOVA test showed Fobs > Fα (25.1686 > 3.07); (2) The 7E Learning Cycle learning model produces better Geography learning achievement compared to the Expository learning model, with an average score of 73.37: 58.92; (3) The 5E Learning Cycle learning model produces better Geography learning achievement compared to the Expository learning model, with an average score of 66.55: 58.92; (4) The 7E Learning Cycle learning model produces better Geography learning achievement compared to the 5E Learning Cycle learning model, with an average score of 73.37: 66.55. The three learning models have different levels of influence, with Learning Cycle 7E having the greatest influence, followed by Learning Cycle 5E and Expository.

Novelty/Originality of this study: This research has a significant contribution in the field of geography education. The results showed that the Learning Cycle 7E learning model had a more positive influence on students' Geography learning outcomes compared to the Expository learning model and the 5E Learning Cycle. These findings provide a new understanding of the effectiveness of various learning models in the context of geography education.

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1. INTRODUCTION

Learning in senior high school is inseparable from lessons. To study geography is not enough just to memorize, but also requires understanding. Based on interviews with Geography teachers for class XI Social Studies and observations made, information was obtained that geography learning conducted by High School teachers was dominated by the use of the lecture method accompanied by Student Worksheets and learning focused only on the teacher (teacher center) so that it did not give students the opportunity to be active in learning activities, as a result students became bored and ended up playing alone and did not pay attention to the teacher's explanation of the material. Learning media at High School is still very minimal, apart from the media which has very minimal facilities and infrastructure at the school which is also incomplete, such as the absence of an LCD projector, the absence of an LCD projector makes it very difficult for teachers to explain material. Even though not all material is suitable for teaching using the lecture method and there are some materials that do need to be explained using pictures or videos. Each material has different characteristics, models and learning media used in conveying learning material must be in accordance with the characteristics of the material. Therefore, teachers must master various types of models and need to prepare media that can support learning activities.

Departing from these problems, we need a learning model that can support learning, which will be able to optimize student learning outcomes, how do teachers deliver material so students can understand the material being studied, and students can play an active role in learning activities. Thus, students' understanding and learning outcomes of Geography will be more optimal if the learning model used by the teacher is in accordance with the characteristics of the material to be taught.

The Learning Cycle learning model is a model that can explore students' understanding. Learning Cycle or in Indonesian means the learning cycle. Learning Cycle is a learning model that is centered on students (student centered) [1]. The Learning Cycle 5E and Learning Cycle 7E learning models are basically the same, the only difference between the two is the learning stages. The Learning Cycle is a series of activity stages (phases) that are organized in such a way that students can master the competencies that must be achieved in learning by playing an active role [2]. The learning process is no longer just a transfer of knowledge from teacher to students, but is a concept acquisition process that is oriented towards active and direct involvement of students [3]. The advantages of the Learning Cycle learning model are 1) it can arouse students' enthusiasm for learning; 2) Increase learning motivation, cooperation and participation of students; 3) Students have the opportunity to express their opinions and ideas; 4) Learning activities are more meaningful and 5) The knowledge gained is more embedded because learning activities involve the participation of students.

The Learning Cycle learning model provides opportunities for students to experiment with discovering and understanding concepts, then concluding the results of the experiments that have been carried out [4]. In this learning the teacher only acts as a motivator and facilitator, it is the students who play a fully active role. "Environmentally Friendly Natural Resource Management Material" is material that requires understanding, students must be able to distinguish which management is environmentally friendly and which management can damage the environment. In addition, students are required to be able to explain impacts and formulate efforts to overcome environmental damage due to the management of natural resources which are not environmentally friendly. Thus, the use of the Learning Cycle learning model is thought to be suitable for the material "Environmentally Friendly Natural Resource Management, in accordance with the characteristics of the learning model. By experimenting, students can find examples of natural resource management that are environmentally sound in various sectors, both agriculture and mining, then students analyze the impact of natural resource management that is not environmentally sound, and formulate what efforts can be made to minimize these impacts, after which students draw their own conclusions from the experiments that have been carried out. So that students will more easily understand the concept because students themselves build the concept from experimental activities.

Based on the problems that have been raised, it is important to do research on the Effect of Applying the Learning Cycle Learning Model on Student Geography Learning Outcomes. As for the aims of this study were: 1) To compare the results of learning Geography of students using the Learning Cycle 7E learning model, Learning Cycle 5E with the Expository. 2) Comparing the results of learning Geography of students using the Learning Cycle 7E learning model with the Expository. 3) Comparing the results of learning Geography of students using the Learning Cycle 5E learning model with the Expository. 4) Comparing the results of learning Geography of students using the Learning Cycle 7E learning model with Learning Cycle 5E.

2. RESEARCH METHOD

The research method used in this research is quasi-experimental (quasi-experimental). The research design used was the Posttest Only Group Design. There are three groups to determine the effect of the

independent variable on the dependent variable. In the experimental class 1, students took part in geography learning using the Learning Cycle 7E model, in the experimental class 2, students took part in learning using the 5E Learning Cycle model, while in the control class, students took part in the learning process using the expository model. At the beginning of the research implementation, each class was given treatment according to what had been planned. Meanwhile, at the end of the study, students were given a final test (posttest). The collected data is then processed and analyzed to find out whether or not there are differences in the effect of treatment on student learning outcomes.

The research was conducted at senior high school. The population is all research subjects [5]–[7]. The population in this study were all students of class XI senior high school department social sciences which consisted of eight classes namely XI social sciences 1, XI social sciences 2, XI social sciences 3, XI social sciences 4, XI social sciences 5, XI social sciences 6, XI social sciences 7 and XI social sciences 8. The sample is part or representative of the population studied [8]–[10]. The samples used in this study were three classes from class XI senior high school department social sciences. The research sample in each class is assumed to be the same (homogeneous), because the acceptance of new students at senior high school uses the National Examination score as a benchmark. The sample can be considered homogeneous, because the National Examination scores of students enrolled at senior high school have a short score interval of 25 – 31. The classes used as samples in this study are class XI social sciences 5, XI social sciences 7 and XI social sciences 8. In this study the sample was determined using the Cluster Random Sampling technique.

The techniques used in data collection are observation, documentation and tests. The test created is a cognitive assessment test. The form of the test used is a description (essay), which is used to collect data about student learning outcomes and is carried out at the end of the meeting in each class (posttest). In this study, the aspects that were assessed were the results of learning Geography in the cognitive domain. In this study, observation was used to observe the suitability of the learning model used by the teacher during the learning process. The observation instrument contains teacher and student activities during the learning process.

The data analysis used in processing the Geography learning outcomes data is by using descriptive statistical and parametric inferential methods. Descriptive statistical analysis is used to describe or provide an overview of data in the form of tables and graphs of the average value in order to easily obtain an overview of the nature or characteristics of objects from the data [11]–[13]. Parametric inferential is used for hypothesis testing. Testing the hypothesis in this study used one way analysis of variance (one way ANOVA) with a significance of 5% ($\alpha = 0.05$). Before the analysis of variance for hypothesis testing is carried out, it is necessary to do a prerequisite test first with the normality test and homogeneity test.

3. RESULTS AND DISCUSSION

3.1 Results

The research data were obtained from the learning outcomes data of students in the cognitive domain on the sub-topic of Environmentally Friendly Natural Resource Management. Data on cognitive learning outcomes were obtained from a written test in the form of an essay which was conducted at the second meeting after being given treatment at the first meeting. The test questions consist of 7 questions covering aspects C1 to C5. The data were obtained from three classes with a total sample of 130 students which were divided into 44 students in class XI social sciences 5, 44 students in class XI social sciences 7 and 42 students in class XI social sciences 8. Class XI social sciences 8 as the control class used the Expository learning model, class XI social sciences 7 as the experimental class 2 using the Learning Cycle 5E learning model and class XI social sciences 5 as the class experiment 1 using the Learning Cycle 7E learning model. Research data in the form of learning outcomes data for students in the Learning Cycle 7E class are presented in the table below.

Table 1. Data on Student Learning Outcomes in Learning Cycle 7E Class

Interval	Middle value	Frequency	Percentage
49 – 55	52	2	4,55%
56 – 62	59	6	13,64%
63 – 69	66	6	13,64%
70 – 76	73	12	27,27%
77 – 83	80	12	27,27%
84 – 90	87	6	13,64%
Amount		44	100%
Means	73,37		
Median	75		
Minimum	50		
Maximum	89,29		

Table 1 shows the distribution of learning outcomes data for students in Learning Cycle 7E class. By using the Learning Cycle 7E learning model in class XI social sciences 5, it can be seen that the most scores of geography learning outcomes are in the intervals 70 – 76 and 77 – 83, namely 12 students. Learning Cycle 7E class has an average of 73.37 with a median value of 75, and has a minimum score of 50 and a maximum score of 89.29. Furthermore, research data in the form of learning outcomes data for students in Learning Cycle 5E Class are presented in the following table.

Table 2. Data on Student Learning Outcomes in Learning Cycle 5E Class

Interval	Middle Value	Frequency	Percentage
42 – 48	45	1	2,27%
49 – 55	52	2	4,55%
56 – 62	59	8	18,18%
63 – 69	66	14	31,82%
70 – 76	73	17	38,64%
77 – 83	80	2	4,55%
Amount		44	100%
Means	66,55		
Median	67,85		
Minimum	46,43		
Maximum	78,57		

The table above shows the distribution of data on learning outcomes for students in Learning Cycle 5E Class. By using the Learning Cycle 5E learning model in class XI social sciences 7, it can be seen that the highest scores for geography learning outcomes are in the 70-76 interval, namely 17 students. Learning Cycle 5E class has an average of 66.55 with a median value of 67.85 and has a minimum score of 46.43 and a maximum score of 78.57. Furthermore, there are expository class learning outcomes. Research data in the form of data on student learning outcomes in the Expository Class are presented in the following table.

Table 3. Expository Class Student Learning Outcomes Data

Interval	Middle Value	Frequency	Percentage
35 – 41	38	2	4,76%
42 – 48	45	2	4,76%
49 – 55	52	14	33,33%
56 – 62	59	11	26,19%
63 – 69	66	7	16,67%
70 – 76	73	4	9,52%
77 – 83	80	1	2,38%
84 – 90	87	1	2,38%
Amount		42	100%
Means	58,92		
Median	58,92		
Minimum	35,71		
Maximum	85,71		

The table above shows the distribution of data on student learning outcomes in the Expository Class. By using the Expository learning model in class XI social sciences 8, it can be seen that the most scores of geography learning outcomes are at intervals of 49-55, namely 14 students. The Expository Class has an average of 58.92 with a median of 58.92 and has a minimum score of 35.71 and a maximum score of 85.71.

Before carrying out a one-way ANOVA hypothesis test (analysis of variance), it is necessary to carry out a normality test and data homogeneity test as a condition. The data used in the prerequisite analysis test is the midterm test scores (UTS) in Learning Cycle 7E Class, Learning Cycle 5E Class and Expository Class.

Data normality is one of the conditions that must be carried out before carrying out the Anava test. This aims to determine whether the sample comes from a normally distributed population or not [14], [15]. The normality of a data is important because with normally distributed data, the data is considered to represent a population [16]–[18]. The normality test can be carried out using the Liliefors method with a significance level of 5%. The normality test results for Posttest data in each class can be seen in Table 4.

Table 4. Data Normality Test Results

Data	Class	L Price		
		L_{count}	L_{table}	Conclusion

	Learning Cycle 7E	0,0772	0,1335	Normal
Posttest	*Learning Cycle 5E*	0,1151	0,1335	Normal
	Expository	0,1241	0,1367	Normal

To determine the normality of the data is done by reading the value of Lcount and value of Ltable. If Lcount < Ltable, then the conclusion is that the data is normally distributed. But if the value of Lcount > Ltable then the data is not normally distributed. Based on table 4.10, it can be obtained information that the value of Lcount in Learning Cycle 7E Class, Learning Cycle 5E Class and Expository Class is smaller than Ltable, so H0 is accepted and it can be concluded that the sample in the study consisted of Learning Cycle 7E Class, Learning Cycle 5E Class and Class The expository comes from a normal population.

The homogeneity test is another prerequisite test that must be carried out before the Anava test, which aims to find out whether the data variance comes from the same (homogeneous) data or not [19]. Homogeneity test was carried out using the Bartlet method with a significance level of 5%. The homogeneity test results for each class can be seen in Table 5 below.

Table 5. Variance Homogeneity Test Results

Data	Class	Harga X^2		
		X^2_{count}	X^2_{table}	Conclusion
	Learning Cycle 7E			Homogen
Posttest	*Learning Cycle 5E*	5,4602	5,991	Homogen
	Expository			Homogen

Determination of data homogeneity is done by reading the value of X2obs and the value of X2table. If X2obs <X2table, then the conclusion is that the data is homogeneous. However, if the value of X2obs > X2table, the data is not homogeneous. Based on Table 4.21, it can be obtained information on the value of X2obs in Learning Cycle 7E Class, Learning Cycle 5E Class and Expository Class which is smaller than X2 table, so H0 is accepted and it can be concluded that the sample in the study consisted of Learning Cycle 7E Class, Learning Cycle 5E Class and Expository Class come from a homogeneous population.

After the data normality test and data homogeneity test are fulfilled, the next step is to test the first hypothesis using one-way ANOVA (analysis of variance). Anova is used to test whether there are differences in the effects of several treatments on the dependent variable. The ANOVA calculation can be presented in Table 6 below.

Table 6. One-way ANOVA calculation results

Source	JK	dk	RK	Fobs	Fα
Method	351,8014	2	175,9007	25,1686	3,07
Error	887,5909	127	6,9889	-	-
Total	1239,3923	129	-	-	-

The table above shows the test results of one-way analysis of variance with cells that are not the same. To determine the test decision, it is enough to look at the Fobs value and Fα value. The Fobs value is 25.1686 while the Fα value is 3.07 when compared, Fobs > Fα (25.1686 > 3.07). This proves that the first hypothesis is appropriate, which states that there are differences in learning outcomes of Geography using the Learning Cycle 7E, Learning Cycle 5E and Expository learning models in the sub-topic of Environmentally Friendly Natural Resource Management students of Class XI Social Sciences.

Thus it can be concluded that there is a significant influence between the use of Learning Cycle 7E, Learning Cycle 5E and Expository learning models. These three models have a significant influence because each learning model tested has different qualities and characteristics. The Learning Cycle learning model is a learning model developed in accordance with the learning theory put forward by Piaget, a constructivism-based learning theory. The development of intellectual skills will relate to the process of finding a balance between what they feel and know on the one hand and what they see a new phenomenon as an experience or problem. To obtain balance one must adapt to the environment. The adaptation process has two forms and occurs simultaneously, namely assimilation and accommodation. Through assimilation students integrate new knowledge from outside into a cognitive structure that already exists within them. Meanwhile, through accommodation students modify existing cognitive structures within themselves with new knowledge. Adaptation will occur if there is a balance in the cognitive structure. Karplus and Their develop learning strategies that are in accordance with Piaget's ideas, in this case learning participants are given the opportunity to

assimilate information by exploring the environment, accommodate information by developing concepts, organize information and connect new concepts by using and expanding their own concepts to explain a different phenomenon. The implementation of Piaget's theory by Karplus was developed into a phase of exploration, concept introduction, and concept application. The elements of Piaget's learning theory correspond to the phases of the learning cycle.

The Learning Cycle learning model is an independent learning model, students are required to find concepts from their own material through simple experimental activities so that their learning will be more meaningful because students get concepts directly from their learning experiences. Students play a full active role in learning activities, the teacher only acts as a motivator and facilitator. Meanwhile, the expository learning model is a model in which learning is dominated by the teacher (teacher centered), students are also less able to convey their ideas and opinions because learning tends to be only one way without any reciprocity between the teacher and students.

To find out the significant differences in the treatment given, it is necessary to carry out a post-anava test, namely by using the Scheffe' method. The Scheffe' method resulted in a count of significant differences in each treatment. The following is a summary of the post-anava test results using the Scheffe' method on the students' Geography learning outcomes which are presented in table 7 below.

Table 7. Post-Anova Test Summary with the Scheffe Method

X_i	*Learning Cycle 7E*	*Learning Cycle 5E*	*Learning Cycle 7E*
X_j	Expository Class	Expository Class	*Learning Cycle 5E*
Average X_i	20,55	18,64	20,55
Average X_j	16,5	16,5	18,64
N_i	44	44	44
N_j	42	42	44
$(\boldsymbol{Xi} - \boldsymbol{Xj})^2$	16,3661	4,5642	3,6058
$\boldsymbol{RKG}\,(\frac{1}{ni} + \frac{1}{nj})$	0,3252	0,3252	0,3177
F_{count}	12,4385	14,0333	11,3506
F_{table}	3,07	3,07	3,07
Test Decision	H_o rejected	H_o rejected	H_o rejected
Conclusion	Different (Better)	Different (Better)	Different (Better)

The table above shows the results of the post-test of variance analysis using the Scheffe method. To determine the test decision in testing the second hypothesis, it is sufficient to look at the Fobs value and the Fα value. The Fobs value is 12.4385 while the Fα value is 3.07 when compared, Fobs > Fα (12.4385 > 3.07). Based on this comparison, the decision taken was that H0 was rejected. This proves that the second hypothesis is appropriate, which states that the Learning Cycle 7E model is better when compared to the Expository model on the learning outcomes of Geography Class XI social sciences students.

Thus, it can be concluded that there is more influence between classes using the Learning Cycle 7E learning model compared to classes using the Expository learning model. This is because in implementing the Learning Cycle 7E learning model the teacher tries to explore students' prior knowledge, students are also required to learn independently to explore the concepts of the material studied through experimental activities and case studies, so that learning will be more meaningful when compared to using Expository learning model which is teacher centered. Students are required to actively discuss to find concepts, then apply the concepts that have been found to solve problems, so that learning Geography will not only memorize but also come to understanding. In addition, in this learning students are also required to connect the concepts that have been found and studied to connect the concepts they have learned with other concepts that they have or have not learned.

Table 6 shows the results of the post-anava test with the Scheffe' method. To determine the test decision, it is sufficient to look at the Fobs and Ftable. The Fobs value is 14.0333 while the Ftable is 3.07 when compared, Fobs > Fα (14.0333 > 3.07). Based on this comparison, the decision taken was that H0 was rejected. This proves that the third hypothesis is appropriate, which states that the 5E Learning Cycle model is better when compared to the Expository model on the learning outcomes of Geography Class XI social sciences students.

Thus it can be concluded that there is more influence between classes using the Learning Cycle 5E learning model compared to classes using the Expository learning mode. This is because the characteristics of the Learning Cycle 5E learning model are almost the same as the Learning Cycle 7E learning model, namely

students are required to learn independently to explore their own knowledge, so learning will be more meaningful when compared to using the Expository learning model which is teacher centered in nature. The main difference between the two learning models lies in the application of concepts that have been found in other problems/cases. The 7E Learning Cycle learning model requires teachers to be able to guide students to apply concepts that students have found in other problems, while the 5E Learning Cycle model does not. The Learning Cycle 5E learning model is only limited to discovering concepts and applying these concepts to one problem only, so that students will have difficulty understanding if given the task of solving other problems.

Whereas in learning that uses the Expository learning model, the teacher's role is very dominant so that students tend to be passive in learning if the teacher cannot control the class well. Students get bored quickly and even many are sleepy. In this lesson students are required to understand the material presented by the teacher. To bridge the boredom of students towards the lesson the researcher combines lectures and questions and answers, but lectures have a higher dominance.

Table 6 shows the results of the post-anava test with the Scheffe' method. To determine the test decision, it is sufficient to look at the Fobs and Ftable. The Fobs value is 11.3506 while the Ftable is 3.07 when compared, Fobs > Fα (11.3506 > 3.07). Based on this comparison, the decision taken was that H0 was rejected. This proves that the fourth hypothesis is appropriate, which states that the Learning Cycle 7E model is better when compared to the Learning Cycle 5E model for the learning outcomes of Geography Class XI social sciences students.

Thus it can be concluded that there is a greater influence on classes using the Learning Cycle 7E learning model compared to classes using the 5E Learning Cycle model. This is because the Learning Cycle 7E learning model has very complex stages compared to the Learning Cycle 5E learning model. The 7E Learning Cycle model is said to be very complex because the model is a development of the 5E Learning Cycle learning model, which is still not perfect.

3.2 Discussion

This study aims to determine the effect of applying the Learning Cycle learning model on student learning outcomes in Geography on the sub-topic of Environmentally Friendly Natural Resource Management. The population used was students of Class XI social sciences with a sample of three classes namely class XI Social Sciences 5, XI social sciences 7 and XI social sciences 8. Class XI social sciences 5 as the control class, XI social sciences 7 as the class experiment 2 and XI social sciences 8 as experimental class 1. In determining the control class and experimental class, the researcher did not base it on the acquisition of learning outcomes on previous basic competencies but by drawing lots of the eight classes in two stages. The first stage is three times taking with returns. The second stage is by drawing back the three selected classes and then determining the experimental and control groups. In taking the two classes that appeared were class XI social sciences 5, XI social sciences 7 and XI social sciences 8. After the second drawing, the first experimental group was determined, namely class XI social sciences 5 which would use the Learning Cycle 7E learning model, the second experimental group was class XI social sciences 7 which will use the Learning Cycle 5E learning model and the control group, namely class XI social sciences 8 which will use the Expository learning model. The three classes that were given treatment produced different average scores of learning outcomes. The average difference is strongly influenced by the method used. A treatment is said to be influential if there is a difference in the average score after being tested.

The learning outcomes of the experimental group 1 were better than the experimental group 2 and the control group, and the experimental group 2 was better than the control group so that the three models had differences. This is due to the characteristics of the model used in the learning process which has a different influence on the final result. Because these three models have different mean scores of learning outcomes, it can be concluded that the three learning models have an influence on student learning outcomes in the sub-topic of Environmentally Friendly Natural Resource Management. The effect is of course different because a learning model must have different qualities and characteristics.

To test the first hypothesis, a one-way analysis of variance (ANOVA) test was carried out. Based on the results obtained, it is known that the value of Fobs > Ftable (25.1686 > 3.07). The decision of the one-way Anava test is that H0 is rejected. Thus it can be concluded that there are significant differences in student learning outcomes between the application of the 7E Learning Cycle learning model, the 5E Learning Cycle learning model, and the Expository learning model. This statement is in accordance with the first hypothesis which states that there are differences in the learning outcomes of Geography of students who use the Learning Cycle 7E, Learning Cycle 5E, and Expository learning models in the sub-subject of Environmental Management of Natural Resources for Class XI students. Thus it can be concluded that there is a significant influence between the use of Learning Cycle 7E, Learning Cycle 5E and Expository learning models. This is because the three learning models used have different qualities and characteristics.

The calculation of the Anava test has not been able to determine which of the treatments is significantly different from other people. To find out which treatment is more influential of the three learning models, a post-ANOVA test was carried out using the Scheffe' method. The Scheffe' method produces a significant difference

in the mean count for each treatment with a different number of samples. Thus, testing the second, third and fourth hypotheses was carried out using the Scheffe' method to find out which learning method is better for student learning outcomes seen from the average score of learning outcomes.

Testing the second hypothesis was carried out by comparing the means of each treatment (Learning Cycle 7E learning model and Expository learning model) significantly. Scheffe' test results show Fobs > Ftable (12.4385 > 3.07). Based on this comparison, the decision taken was that H0 was rejected. So it can be concluded that the learning outcomes of students using the Learning Cycle 7E learning model are better when compared to learning outcomes using the Expository learning model. Based on the scores of the students' learning outcomes, it is known that the Experimental Class 1 (Class XI social sciences 5) which was given treatment using the Learning Cycle 7E learning model had an average score of learning outcomes of 73.37 while the Control Class (Class XI social sciences 8) which was given treatment using the Expository learning model had an average score of 58.92 learning outcomes and the difference in the average score of learning outcomes for the two models was 14.45. This shows that the mean score of the Geography learning outcomes of students using the Learning Cycle 7E learning model is better than the Geography learning outcomes of students using the Expository learning model. Thus, it can be concluded that there is a greater influence on classes that use the Learning Cycle 7E learning model compared to classes that use the Expository model. Because Learning Cycle 7E learning has several advantages, namely: 1) stimulates students to recall the subject matter they have previously learned, 2) trains students to learn to find concepts through experimental activities, 3) provides opportunities for students to think, search, find, and explain examples of applying concepts that have been learned, 4) teachers and students carry out learning phases that complement one another.

Testing the third hypothesis was carried out by significantly comparing the means of each treatment (Learning Cycle 5E model and Expository learning model). The results of the Scheffe' test showed the value of Fobs > Ftable (14.0333 > 3.07). Based on this comparison, the decision taken was that H0 was rejected. So it can be concluded that the learning outcomes of students using the Learning Cycle 5E learning model are better when compared to learning outcomes using the Expository learning model. Based on the scores of students' learning outcomes, it is known that the Experimental Class 2 (Class XI social sciences 7) which was given treatment using the Learning Cycle 5E learning model had an average score of learning outcomes of 66.55 while the Control Class (Class XI social sciences 8) was given treatment using the Expository learning model has an average score of 58.92 and the difference in the average score of the learning outcomes of the two models is 7.63. This shows that the mean score of the Geography learning outcomes of students using the Learning Cycle 5E learning model is better than the Geography learning outcomes of students using the Expository learning model. Thus, it can be concluded that there is a greater influence on classes using the Learning Cycle 5E learning model compared to classes using the Expository model. Because Learning Cycle 5E learning has several advantages, namely: 1) increasing learning motivation because students are actively involved in the learning process, 2) more opportunities to convey ideas and opinions, 3) learning becomes more meaningful.

Testing the fourth hypothesis was carried out by significantly comparing the means of each treatment (Learning Cycle 7E learning model and Learning Cycle 5E learning model). Scheffe' test results show the Fobs value > Ftable (11.3506 > 3.07). Based on this comparison, the decision taken was that H0 was rejected. So it can be concluded that the learning outcomes of students using the 7E Learning Cycle learning model are better when compared to the learning outcomes using the 5E Learning Cycle learning model. Based on the scores of students' learning outcomes, it is known that the Experimental Class 1 (Class XI social sciences 5) which was given treatment using the Learning Cycle 7E learning model had an average score of learning outcomes of 73.37 while the Experimental Class 2 (Class XI social sciences 7) which was given treatment with using the Learning Cycle 5E learning model has an average score of 66.55 learning outcomes and the difference in the average score of learning outcomes for the two models is 6.82. This shows that the average score of the Geography learning outcomes of students using the 7E Learning Cycle learning model is better than the Geography learning outcomes of students using the 5E Learning Cycle learning model. Thus, it can be concluded that there is a greater influence on classes that use the Learning Cycle 7E learning model compared to classes that use the 5E Learning Cycle model. This is because the Learning Cycle 7E learning model has very complex stages compared to the Learning Cycle 5E learning model. The 7E Learning Cycle model is said to be very complex because this model is a development of the 5E Learning Cycle learning model, which is still not perfect. Eisenkraft (2003; 1) considers that the Learning Cycle 5E learning model needs to be refined by adding Elicit and Extend phases. Eisenkraft considers that students' initial knowledge is important, so that teachers can adjust the material to be taught with students' prior knowledge. In addition, broadening students' knowledge in the Extend phase is also very necessary, because then students can solve various problems in the surrounding environment with the provision of material or concepts they have learned.

The final decision after testing the second, third and fourth hypotheses with the Scheffe' method resulted in a decision that the 7E Learning Cycle learning model was better than the 5E Learning Cycle learning model and the Expository learning model, so it could be concluded that the three learning models had different qualities.

The average learning outcomes of students who were given treatment with the 7E Learning Cycle learning model were higher than those treated using the 5E Learning Cycle learning model and the Expository model. This is influenced by the characteristics of the learning method used.

The Learning Cycle learning model is an independent learning model, students are required to find concepts from their own material through simple experimental activities so that their learning will be more meaningful because students get concepts directly from their learning experiences. Students play a full active role in learning activities, the teacher only acts as a motivator and facilitator. In the Learning Cycle 7E learning model the teacher tries to explore students' prior knowledge, students are also required to learn independently to find their own concepts from the material studied through experimental activities and case studies, so that learning will be more meaningful when compared to using the Expository learning model which its nature is teacher centered. Students are required to actively discuss to find concepts, then apply the concepts that have been found to solve problems, so that learning Geography will not only memorize but also come to understanding. In addition, in this learning students are also required to connect the concepts that have been found and studied to connect the concepts they have learned with other concepts that they have or have not learned.

The characteristics of the Learning Cycle 5E learning model are almost the same as the Learning Cycle 7E learning model, namely students are required to learn independently to explore their own knowledge, so that learning will be more meaningful when compared to using the Expository learning model which is teacher centered in nature. The main difference between the two learning models lies in the application of concepts that have been found in other problems/cases. The 7E Learning Cycle learning model requires teachers to be able to guide students to apply concepts that students have found in other problems, while the 5E Learning Cycle model does not. The Learning Cycle 5E learning model is only limited to discovering concepts and applying these concepts to one problem only, so that students will have difficulty understanding if given the task of solving other problems.

Whereas in learning that uses the Expository learning model, the teacher's role is very dominant so that students tend to be passive in learning if the teacher cannot control the class well. Students get bored quickly and even many are sleepy. In this lesson students are required to understand the material presented by the teacher. To bridge the boredom of students towards the lesson the researcher combines lectures and questions and answers, but lectures have a higher dominance.

In applying the Learning Cycle learning model, there are several obstacles that can hinder the effectiveness of learning. The main obstacle faced by researchers is the characteristics of students which are rather difficult to condition so that learning time takes up a lot to condition students. Even though the phases in the Learning Cycle learning model are very numerous and require the participation of students in each phase. In discussion activities the teacher must actively go around to help. Students who are not active in discussions will have difficulty understanding the material, because the main points of learning with this model are in discussion activities, namely when students find concepts from the material being studied.

Based on the discussion above, it can be seen that the Learning Cycle 7E learning model is better than the 5E Learning Cycle learning model, the 7E Learning Cycle learning model is better than the Expository learning model, and the 5E Learning Cycle is better than the Expository learning model. It can be said that the three learning models have different qualities. The best learning model of the three learning models is the 7E Learning Cycle learning model, followed by the 5E Learning Cycle learning model and the Expository learning model. So, it can be concluded that the application of the Learning Cycle 7E learning model has more influence on the learning outcomes of class XI social sciences students in the sub-topic of Environmentally Friendly Natural Resource Management.

4. CONCLUSION

Based on the results of data analysis and discussion of the results of the research that has been described, it can be concluded that: 1) In accordance with the decision to test the first hypothesis using a one-way Anava test, there is an effect of applying the Learning Cycle 7E, Learning Cycle 5E and Expository learning models to the learning outcomes of Geography students of Class XI social sciences on the sub subject matter of Environmentally Friendly Natural Resource Management; 2) In accordance with the decision to test the second hypothesis using a one-way post-anava test with the Scheffe' method, the 7E Learning Cycle model is better when compared to the Expository model on learning outcomes of Geography Class XI social sciences on the sub subject of Environmentally Friendly Natural Resource Management; 3) In accordance with the decision to test the third hypothesis using a one-way post-anava test with the Scheffe' method, the 5E Learning Cycle model is better when compared to the Expository model on learning outcomes of Geography Class XI social sciences on the sub subject of Environmentally Friendly Natural Resource Management; 4) In accordance with the decision to test the fourth hypothesis using a one-way post-anava test with the Scheffe' method, the 7E Learning Cycle

model is better than the 5E Learning Cycle model for the learning outcomes of Geography Class XI social sciences on the sub subject of Environmentally Friendly Natural Resource Management.

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