Conference Paper

The Effect of the Surrounding Environment As a Learning Resource on the Mastery Concept and Creative Thinking on Elementary School

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Abstract

The objectives of this study were to examine The effect of the Surrounding Environment as a Learning Resource on The Mastery Concept and Creative Thinking. This study used the quantitative method. The study design was quasi-experimental with the pretest and the posttest group design. The study population included all the fourth graders of SD Negeri Se-Gugus Kartini Warureja Tegal. The samples in this study were determined by simple random sampling technique so that the fourth grade of SD Negeri Warureja 02 classes were given treatment by utilizing the surrounding environment as a learning resource, the fourth grade of SD N Warureja 01 was treated with conventional learning. The research instruments used include concept mastering test and creative thinking. Normality test was done by Kolmogorov-Smirnov method and homogeneity test using Box'M test.The Data were analysed by hypothesis testing beginning with univariate mean difference test using independent sample t-test and MANOVA test with T2 Hotteling formula. The result of this research are as follow (1) the utilization of the Surrounding Environment as a Learning Resource had an effect on Mastery Concept (2) the utilization of the Surrounding Environment as a Source of Learning Approach affects the Creative Thinking (3) the utilization of the Surrounding Environment as a Source of Learning affects the Mastery concepts and Creative Thinking together.

Keywords: Learning Resources; Surrounding Environment; Concept Matery; Creative Thinking.

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1. Introduction

Education is very important in achieving the objectives of the state. Recognizing the importance of education, the government always strives for equal distribution of education for its people so that the goals of the state can be achieved . One of the problems in education is in terms of things teaching and learning activities. Munandar (Yusi Ardiyanti, 2014: 18) suggests that teaching in schools is generally limited to verbal reasoning and logical thinking, on tasks that only require convergent thinking, namely thinking towards

a single answer. This results in students accustomed to thinking converging so that when faced with a problem, students will experience difficulties in solving problems because of the low development of student creativity.

Another problem in teaching and learning activities in schools is the low ability to master students' concepts. Mastery of concepts is one of the goals of learning in elementary school . In learning in schools mastery of concepts and creative thinking skills is one of the benchmarks in learning activities. The importance of the ability to master concepts and creative thinking of students is needed improvement efforts so that students are able to master the concepts that are taught and are able to think creatively in solving various problems in learning. To be able to achieve this, it takes hard work from the teacher to be able to help students in mastering concepts and creative thinking. The use of methods that are appropriate for learning is expected to be able to bridge the achievement of these objectives .

1.1. The structure

The same problems occur in class IV at Warureja 01 Elementary School and Warureja 02 Public Elementary School. The teacher does not provide a real learning experience to students and is less able to utilize existing learning resources. The teacher is also still dominant in using the lecture method to convey the subject matter so that it is not uncommon for students who look bored in class. students are less actively involved in learning. For the condition of students, students are more passive when the teacher provides learning and students are unable to deduce themselves the material they have obtained.

When the teacher gives questions the student only answers with a short answer without any explanation and development of the answers from the students themselves. This shows that the lack of understanding of the concept of students in receiving the material that has been given by the teacher. As well as answering the answer briefly also shows students are less creative in answering questions so that the students in creative thinking are still low. In order to improve the ability to think creatively, it would be good for teachers to provide problems directly, namely by using the surrounding environment to be used as an example of problems to students. The surrounding environment can help students in the learning process because it can provide direct and real examples to students so as to facilitate students in understanding the material being taught. So, the surrounding environment can provide new information that can increase and increase the understanding of students from those who previously did not know to be more

aware. Basically the development of primary school age is at a concrete operational level where the provision of real experiences can help develop students 'understanding and enhance students' creativity.

1.1.1. Refrences citations

Based on the explanation and problem identification, then the problem in this research

[1] Low mastery of concepts and creative thinking of students.

[2] Students look bored and not active in teaching and learning activities.

[3] The surrounding environment has not been used optimally by teachers in the learning process

2. Literature Review

The research conducted by Herka Ardiyatno in 2017 entitled "The Influence of the Utilization of the Natural Environment Around as a Learning Source on Mastery of Concepts, Creative Thinking, and Environmental Care Characters" where the research design used a quasi experiment which showed that the learning variables that utilized the natural environment around as a learning source influences mastery of concepts with values in experimental class 1 count 5.513> t table 2.009 and in experimental class 2 t count 5.139> t table 2.010. And also influence the creative thinking with the value in the experimental class 1 tcount 8.051> t table 2.009 and in the experimental class 2 t count 7.419> t table 2.010. Furthermore, Sri Nurisa Ndaruwati in 2017 had conducted a study entitled "The Influence of the Natural Environment Approach Around the Cognitive Learning Achievement of Grade IV Students of SD Segugus II Prambanan Klaten" by using quasi experiments which showed that the variables of environmental utilization as learning resources had an effect on increasing achievement cognitive learning science. with tcount 2,511> t table 2,064. Based on the relevant research above, it proves that the environment has a positive effect on mastery of concepts, creative thinking and cognitive learning achievement of science. Therefore, this study wants to prove that there is an influence from the use of the surrounding environment used as a learning resource that is closely related to the mastery of students' creative concepts and thinking.

2.1. The surrounding environment as a learning resource

In the implementation of teaching and learning teachers should utilize adequate learning resources, because the use of learning resources is important in the learning process that can help and provide opportunities for students to be more active in the learning process and can provide a real learning experience. The learning method that can attract students is material that is close to their lives, for example the environment they experience. This is in accordance with the opinion of Swarat (2008: 18) mentions "More precisely, the topic of dealing with material relevant to participant's live- either about their own lives, the physical environment they live in, or the society to which belongs to are considered more important, and this more interesting ". Meanwhile, according to Jan Ligthart (Hamalik, 2011: 194) states that education should be adjusted to the circumstances surrounding us. So the application of learning by utilizing the surrounding environment as a learning resource is expected to help students develop their cognitive or shape the character of students who know and love their environment more. The use of the environment as a learning resource also has advantages. These benefits are explained by Kosasih (2014: 65-66) such as 1) Can develop the skills of students in expression and exploration, 2) Students can get a more complete learning experience and learning activities more enjoyable 3) Relationships between teachers and students will be more familiar 4) Students not only dwell on theoretical material, but students listen, watch, feel, and relate directly to a number of learning experiences directly from the environment through the involvement of more than five senses, 5) Can build a stronger meaning of learning followed by the optimal functioning of the cognitive structure of students so that it will last a long time in memory, and 6) Can create a more active and enjoyable learning process, allowing students to further develop higher-order thinking skills, such as analyzing and synthesizing, and assessing various events learn. So the application of learning by utilizing the surrounding environment as a learning resource is expected to help students develop their cognitive or shape the character of students who know and love their environment more.

2.2. Mastery of concepts

Mastery of concepts has an important role in learning activities. Mastery of concepts is one of the cognitive domains that is used as a guide in achieving the objectives of the learning process. according to Saridi Salimin (2011: 208) explains that "meaningful learning (meaning full learning) is a process of relating new information to relevant

concepts contained in one's cognitive structure". In the process of teaching and learning activities do not continuously memorize all concepts and facts taught by educators but activities that connect concepts and facts obtained both new and old information nature into new understanding so as to produce a combination of existing information and new information. The mastery of the concept according to Bloom (Silaban, 2014: 66) is an ability to capture notions such as being able to express a material that is presented in a form that is better understood, able to interpret and be able to apply it. The ability to understand a concept is greatly influenced by one's thinking ability. While the level of mastery of the expected concept depends on the complexity of the concept and the level of cognitive development of students. So students are said to master the concept when the student is able to record and transfer back a number of information from a particular material that can be used in solving problems, analyzing, and interpreting an event that is related to the subject matter related to the field of study.

2.3. Creative thinking

Developing students' creative thinking skills is one of the focuses that educators want to achieve in learning. Creative thinking is a person's mental activity when experiencing a problem so that it looks for a solution or problem solving from what a person experiences. Torrance (Wang, 2011: 1) also believes "creativity thinks as ability to sense problem, make guesses, generate new ideas, and communicate result". So creative thinking skills are cognitive skills to bring up and develop new ideas, new ideas as the development of ideas that have been born before and the skills to solve problems divergently or from various points of view. Basically, the ability to think creatively is owned by all humans, including students. But the students' creative thinking ability will gradually decrease due to lack of training in honing and developing their creativity. According to Colin & Malcolm (2002: 227), creative thinking is a habit of thinking that is trained by paying attention to intuition, turning on imagination, expressing new possibilities, opening perspectives, and generating unexpected ideas. Based on these opinions the role of a teacher is very important in honing or training the creativity of students because the teacher can provide ideas and questions that can generate creative ideas in students.

3. Material & Methodology

3.1. Data

Data analysis used in this study is descriptive and inferential analysis. Descriptive analysis is used to describe the results of the study in the form of mean (mean), mastery of concepts and creative thinking from the data obtained. Before entering the hypothesis test should be carried out a prerequisite assumption test: normality and homogeneity test. In this study the normality test used is Kolmogorov - Smirnov with the help of SPSS 23 software.. while for homogeneity testing is done with SPPS 23 software 'with a significance level of research by 5% (0.05). Hypothesis testing in this study using independent t test and manova test that uses software spss 23. This test is conducted to test whether there is an increase in mastery of concepts and creative thinking of students before and after being given treatment, namely learning that utilizes the surrounding environment as a learning resource, then Manova test is done because there are two dependent variables to be tested for influence.

3.2. Method

This research is a quantitative experimental research that is quasi experiment. In this study there are two classes studied: the experimental group and the control class. With the subject of this research are the fourth grade students of SD Negeri Warureja 02 as the experimental class and the fourth grade students of SD Negeri Warureja 01 as the control class in Kec. Warureja regency. Tegal and the object of this research are mastery of concepts and creative thinking. The design of this study uses the Nonequivalent Control Group pretest-posttest Design with one experimental group and one control group. The first experimental group uses learning that utilizes the surrounding environment as a learning resource. While the control group uses conventional methods.

TABLE 1: Nonequivalent Control Group pretest-posttest Design.

Class	Pretest	Treatment	Posttest
G1	01	X	02
G2	O3	-	04

Where:

G1: Experiment Group   O1: Pretest for the experimental group

G2: Control Group   O2: Posttest for experimental group

X: With the learning treatment utilizing the surrounding environment as a learning resource   O3: Pretest for the control group

-: with conventional learning treatment   O4: Posttest for the control group

The population in this study were fourth grade elementary school students in the Kartini Warureja Tegal cluster, then the sample of this study was taken by simple random sampling technique. The variables in this study are the use of the surrounding environment as a learning source as an independent variable and mastery of concepts and creative thinking as the dependent variable. The technique in this study is a test. The analysis used using two methods, namely descriptive analysis and inferential analysis. Descriptive analysis results using mean and posttest numerical mastery of concepts and creative thinking, while inferential analysis is independent t test and MANOVA test with T2 Hotteling formula.

4. Results and Discussion

4.1. Result

Statistical descriptions are used to describe the results of the study in the form of the mean (highest), highest score and lowest score.

Information	Pretest		Posttest	
	Experiment	**Control**		**Experiment**
Average value	49.45	49.91	69.23	60.99
Lowest value	40	40	61.6	46.6
The highest score	65	71.6	81.6	76.6
The number of students	32	32	32	32

Based on the results of the pretest and posttest data presented in the table above it is known that the average value of pretest in the experimental group and the control group there is no significant difference, so it can be said that the mastery of the concept of students is the same. Whereas, the results of the average posttest scores of the experimental group and the control group have significant differences. This is because there are differences in treatment given to experimental groups that use environmental learning as learning resources, and control groups that use conventional learning.

Normality test is used to determine whether the data from each variable is normally distributed or not. Normality test is done using Kolmogrov method, assisted by SPSS 23 for Windows. The test criteria are if the significance value is> 0.05, then Ho is accepted and vice versa if the significance value is <0.05, then Ho is rejected. The table will present a summary of the results of the Normality test in the experimental group and the control group Normality test

No	Explanation	Variable	Significance Value		Decision
			Experiment Class	Control Class	
1.	Pretest	Mastery of Concepts	0.174	0.097	Normal
2.		Creative Thinking	0.087	0.191	Normal
3.	Posttest	Mastery of Concepts	0.165	0.200	Normal
4.		Creative Thinking	0.062	0.086	Normal

Based on the table above, it can be seen that the value of the Kolmogrov-Smirov significance of the experimental group when pretest mastery of concepts is 0.174 and the pretest of creative thinking is 0.087 while for posttest mastery of concepts is 0.165, and posttest creative thinking is 0.062. then for the control group at pretest mastery of the concept that is 0.097 and pretest of creative thinking is 0.191 while for posttest concept mastery is 0.200 and posttest creative thinking is 0.086.. Because the significance value of the control class and experimental class for pretest and posttest is> 0.05 then Ho accepted. So it can be concluded that mastery of concepts and creative thinking in the experimental class at pretest and posttest, and pretest before and posttest control classes are normally distributed

Homogeneity test is done to find out whether there are research subjects from homogeneous populations or not. This homogeneity test calculation is done by using the Levenes test homogeneity test with the help of SPSS 23 for windows. The test criteria are if the significance value> 0.05 then Ho is accepted and vice versa if the significance value is <0.05 then Ho is rejected.

No	VARIABLE	SIG	INTERPRETATION
1	PRETEST	0,475	Homogeneous
2	POSTEST	0,403	Homogeneous

Based on the results of the pretest homogeneity test can be seen from the statistical test significance value of Lavene test in the table above obtained sig value of 0.475. Because the significance is greater than 0.05, it can be said to be homogeneous data. Whereas, the results of the posttest homogeneity test can be seen from the statistical test significance value of Lavene test in the table above obtained sig value of 0.403. Because the significance is greater than 0.05, it can be said to be homogeneous data.

Hypothesis testing in this study uses independent t test and the next manova test is carried out with the provision criteria if F count is smaller than F table then Ho is accepted, meaning there is no significant difference.

Test independent t test Experimental class and Control class

No	Variable	sig
1	Mastery of Concepts	0,000
2	Creative Thinking	0,037

Based on the calculation of the independent t-test, it shows that the significant value for mastery of the concept is 0.000, while for creative thinking the significance value is 0.037. This means that the significance value <0.05, it can be concluded that learning by utilizing the surrounding environment as a learning resource in the experimental class and learning with conventional learning in the control class has a significant effect on mastery of concepts, and creative thinking in fourth grade students of SD Negeri Warureja 01 and SD Negeri Warureja 02.

Manova test is done because in this study there are two variables that will be tested for influence. Tabel Manova

	Multivariate Tests[a]					
	Effect	**Value**	**F**	**Hypothesis df**	**Error df**	**Sig.**
Kelas	Pillai's Trace	0.311	13.760[b]	2	61.000	0.000
	Wilks' Lambda	0.689	13.760[b]	2	61.000	0.000
	Hotelling's Trace	0.451	13.760[b]	2	61.000	0.000
	Roy's Largest Root	0.451	13.760[b]	2	61.000	0.000

Based on the above table, it is known that the significance value shows 0.000 <0.05. So it can be concluded that there are differences in the ability to master concepts and creative thinking between the experimental class and the control class.

4.2. Discussion

The results of independent analysis of t-test posttest mastery of concepts in the Experimental class and control class obtained a significant level of 0.000 or <0.05. Thus the results of the t-test indicate that learning that utilizes the surrounding environment as a learning resource has a significant effect on mastery of the concept. In learning the students look more interested and enthusiastic in receiving the material taught by the teacher. This is because students are not limited to listening to the teacher's explanation but students are invited to be active in participating in learning and direct and real examples also have a significant impact on the mastery of students' concepts. Susan Mills (2006: 551) argues that the achievement of conceptual understanding can be helped by meaningful learning activities. By giving examples directly to students,

students can prove their own material delivered by the teacher. next hypothesis Based on the results of independent test posttest t-test creative thinking shows that the significant value in the experimental class and the control class is 0.037. This means the significance value is <0.05. This shows that there are significant differences in influence by utilizing the surrounding environment as a source of learning towards creative thinking. In learning, student-centered activities are carried out by giving real problems to students so that they can stimulate students' thinking to improve their creative thinking skills. This is in accordance with Kuan Chen Tsai's (2013: 3) opinion which states that giving problems directly in the surrounding natural environment can stimulate students to think creatively in finding new ideas.

The next hypothesis, to analyze the influence of the use of the surrounding environment as a learning resource on mastery of concepts and creative thinking together, then used hypothesis testing using the average difference test of MANOVA with the T2 Hotteling formula. The significance value for the posttest shows 0.000 <0.05, meaning that H0 is rejected and H1 is accepted. So it was concluded that there were differences in posttest ability in mastering concepts and creative thinking between students in the experimental class and the control class. Thus it can be concluded that the use of the surrounding environment as a learning resource can have a positive and significant influence on mastery of concepts and creative thinking together with fourth grade students of the Kartini cluster of Warureja District, Tegal Regency, Central Java

5. Conclusion

A conclusion should give a summary of:

1. The use of the surrounding environment as a learning resource has a positive and significant effect on the mastery of the concept of fourth grade students of the Kartini cluster in Warureja sub-district, Tegal regency, Central Java.

2. Utilization of the surrounding environment as a learning resource has a positive and significant effect on creative thinking of fourth grade students Se-gugus Kartini District Warureja, Tegal Regency, Central Java

3. The use of the surrounding environment as a learning resource has a positive and significant effect on the mastery of concepts and creative thinking of fourth graders Se-gugus Kartini Kecamatan Warureja, Tegal Regency, Central Java

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