

APPLICATION OF COOPERATIVE LEARNING MODEL FOR MATHEMATICS IN ELEMENTARY SCHOOL

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Abstract: In the process of teaching and learning it will be fun if students have self-efficacy and the teacher has high creativity in teaching. The purpose of this study is to find out how much the relationship between teacher teaching creativity and self-efficacy of fifth grade students at SDN Sukamaju 03 District Cigudeg, Bogor Regency. This type of quantitative research is a functional relationship between variable X with variable Y, the subjects in this study were 1 group teacher that was sampled only grade V teachers who numbered 20 and class V students of SDN Sukamaju 03 totaling 20 students and the data obtained from questionnaires, Data collection techniques by questionnaire, observation, interview and documentation. Based on the results of testing using *product moment*, the correlation between teacher teaching creativity (X) with student self-efficacy (Y) obtained a value of $r_{\text{count}} = 0.790$ and r_{table} for 20 is 0.444 at level significance of 5% thus $r_{\text{count}} > r_{\text{table}}$ ($0.790 > 0.444$) then H_0 is rejected, which means there is a significant correlation between creativity teaching self-efficacy of teachers with students. The significance of the regression equation obtained the F_{count} of 29.840 and the F_{table} of 4.41 with a sig value of 0.000, so that $F_{\text{count}} > F_{\text{table}}$, then there is a significant relationship between teacher teaching creativity (Variable X) and student self-efficacy (Variable Y). And this research is to get $R^2 = 0.624$ 62.4% showed their creativity variables affect self-efficacy of teachers to teach students, the remaining 37.6% influenced by other factors not an analysis in this study.

Keywords: teacher's creativity; self-efficacy; mathematics

1. INTRODUCTION

Basically students have the ability to learn in themselves which certainly really affects the learning process such as the ability to do work assigned to it, the ability to complete tasks, the ability to solve problems, the ability of self looks more in dealing with problems, more confident, more confident in himself in everyday life both within the school area and outside the school area. However, there are also students who do not believe in their own self-skills, students who have less self-skills, namely: students tend to avoid assignments assigned to them, always consider difficult tasks as a threat to themselves, trust other people's abilities more than their abilities, who have less self-ability when experiencing failure will find it difficult to wake up from the failure, students who have less self-ability do not think how to deal with problems (Sheldrake et al., 2015).

The high creativity of teachers is expected to increase student self-efficacy. This is consistent with what was stated by William and Robert Louis that "*improving one's self-efficacy appears to increase individual creativity for maximizing the learning opportunities for students*". Increasing one's self-efficacy is seen to increase individual creativity to maximize learning opportunities for students.

The theory states that an increase in teacher creativity will result in the development of student self-efficacy, so the learning process feels maximum. Humans who are confident in carrying out the work, will try harder and more creatively to be able to achieve success. Conversely, if a crisis of confidence occurs in an individual, it will lead to failure. The creativity is creating a personality of God "Al-Khalik" which can be realized in human beings and that according to Islamic philosophy is considered worship in a very general sense (Langgung, 1995). The creativity is a procedure that is passed by an individual in the midst of his skills and which makes him to justify and develop (Collins, 2014).

Creativity is made as a comprehensive activity and all of these activities can be achieved by the consciousness of the souls who created it. Creativity is related to the creation of something, about things that manifest something new by using something that already exists (Slameto, 1988). Teaching creativity is a capacity where the teacher must develop new and innovative thinking in teaching (Richardson, 2018). Perceptions created or depictions in classroom activities can be energetic and useful in the learning process.

The creativity is common and therefore all activities are assisted, guided and generated by that awareness (Griggs & Jackson, 2011). Creativity is the ability to make new combinations, based on existing data, information or elements. Thus that teaching creativity is defined as a quality where the teacher must develop new and imaginative ideas in teaching. Actually, ideas created or visualized in class activities can be dynamic and important in the learning process. The teacher who provides new insights and strategies on the conditions of teaching and learning is a true art expert (Elliott et al., 2016; Prast et al., 2015).

A teacher should be creative in learning so as to provide learning relief for all students, so that they can develop their capacity to the maximum. Learning is a linked mechanism and involves various angles that are interconnected. The teacher's creativity in finding ways or methods that are accurate and said to be new in the form of transferring knowledge or ways of presenting the material properly, then demands a solemn or competent effort, so that learning objectives are achieved (Trucano, 2017). The development of creativity can be done through influential learning mechanisms, and cannot be done only with expository learning activities. Because the essence of creativity is the development of critical thinking skills (Lucas, 2016; Shively et al., 2018). To develop these abilities, the teacher needs to create a state of teaching and learning that many deliver opportunities to students to solve problems, do some experiments, develop students' own ideas. Such a situation also requires a more absolute, open, friendly, and trusting attitude towards students.

One important aspect of creativity is understanding its characteristics. The main characteristics of creativity can be divided into two categories, namely, *aptitude* and *non-aptitude* related to creativity. Characteristics of *aptitude* or cognitive and creativity (creative thinking) include (1) *Fluency*, which is the ability to present similar ideas to answer a problem; (2) *Flexibility*, which is a qualification to realize a variety of thoughts in order to answer the problem of a problem outside the usual section; (3) *Originality*, which is the potential to provide phenomenal or extraordinary responses; (4) *Elaboration*, which is the ability to express thought briefly in order to put thought into reality; (5) *Sensitivity* (sensitivity), namely the sensitivity of taking and setting problems in response to a condition (Rahmawati & Kurniati, 2010). Whereas the *non-aptitude* traits are characteristics that are more related to attitudes or feelings, motivations or impulses than in doing something curiosity, imaginative, feel challenged by pluralism, dare to take risks and respect.

The purpose of this study is to find out how much the relationship between teacher teaching creativity and self-efficacy of fifth grade students at SDN Sukamaju 03 District Cigudeg, Bogor Regency

2. METHODS

The method in this study uses a quantitative approach to functional relationships that intends to find out whether or not there is a relationship between the variables of teacher creativity in teaching with student self-efficacy variables. The type of paradigm used in this study uses a simple paradigm consisting of one *independent* and *dependent variable*. The research instrument is an instrument used to collect research data, both qualitative and quantitative data. The use of research instruments is to find detailed information about a problem and to answer research data, both qualitative and quantitative data. This reserach was used questionnaire that is carried out by giving several questions or statements to respondents to be answered about the variables to be examined. Another way is interview that used an unstructured interview aimed at the teacher. In this study, researchers conducted interviews with the guardians of class V. In the study, the data has a higher position, because the data is a description of the variables being investigated and serves as a tool to prove hypotheses. The validity of the data strongly ensures the quality and results of research. Whether or not the data is right depending on the data collection instruments. An instrument is stated as a good measurement tool if it has characteristics that are valid (valid) and reliable (reliable) Inferential analysis, (often also called inductive statistics or probability statistics) are statistics used to analyze sample data and the results are treated for the population. This statistic is suitable for use when samples are quoted from specific populations, and the sampling technique is carried out randomly. So inferential analysis is the analysis used to analyze sample data, the results of which will be used for populations with random sampling technique

3. RESULTS AND DISCUSSION

Result

To obtain data, researchers sought information by utilizing an instrument in the form of a questionnaire that aimed to find out the relationship between teacher teaching creativity and self-efficacy of class V students of SDN Sukamaju 03. The questionnaire distributed consisted of 20 statements that included teacher teaching creativity and 20 items statement that includes about student self-efficacy. The results of the data obtained by researchers are as follows:

Table 1 Student self-efficacy

Variable	Mean	Median	Mode	Standard Deviation	Max	Min	N
Teacher Teaching Creativity	66	64	62	6.5	80	55	20
Student Self Efficacy	67.4	66.5	80	6.8	80	57	20

Table 1 display that the value of teacher's teaching creativity consisting of 20 statements obtained the lowest score of 55, the highest score of 80, the average score (mean) of 66, median 64, mode 62 and standard deviation of 6.5. And student self-efficacy data consisting of 20 statements obtained the lowest score of 57, the highest 80, the average (mean) 67.4, the median 66.5, mode 80 and standard deviation 6.8. For testing the analysis requirements of the analysis data that must be tested are the normality test and the linearity test. Normality test in this study uses Kolmogorov-Smirnov with the help of SPSS to predict whether the data in this study are normally distributed or not.

Table 2 One-sample kolmogorov-smirnov test

		Unstandardized Residual
N		20
Normal Parameters ^a	Mean	.0000000
	Std. Deviation	4,22823165
Most Differences	Extreme Absolute	.262
	Positive	.262
	Negative	-.109
Kolmogorov-Smirnov Z		1.173
Asymp. Sig. (2-tailed).		128

a. Test distribution is Normal.

Based on Table 2, the normality test using the Kolmogorov-Smirnov obtained sig 0.128 this means that the value > 0.05 so that it can be concluded that the data is normally distributed. This linearity test aims to read the relationship between the independent variable and the dependent variable is linear or not. Linearity testing criteria is if the significance value < 0.05 then the relationship between the independent variable and the dependent variable is not linear, and if the significance value > 0.05 then the relationship between the independent variable and the linear dependent variable is concluded. The linearity test results are as follows:

Table 3 ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Self Efficacy * Creativity Teaching Students Teachers	Between Groups	805,13373,194.009	11		5,995	(Combined)
	Linearity	563 119	1	563 119	46 126	.000
	Deviation from Linearity	242 014	10	24 201	1,982	.172
	Within Groups	97 667	8	12 208		
Total		902 800	19			

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From Table 3, it is known that sig deviation from linearity of 0.172. Because the sig value is $0.172 > 0.05$, it can be concluded that H_0 is rejected and H_a is accepted, meaning that there is a linear relationship between teacher's teaching creativity and student self-efficacy.

Discussion

This study intends to determine the relationship of teacher teaching creativity with the self-efficacy of fifth grade students at SDN Sukamaju 03, Cigudeg sub-district, Bogor district. To obtain data on teacher teaching creativity and student self-efficacy the researcher gave a teacher creativity questionnaire to group teacher 2, amounting to 20 teachers, and self-efficacy to class v students, amounting to 20 students.

The teacher's creativity in teaching is the teacher's ability to give birth to something new or combination, different, and unique, depending on the experience gained previously. Besides teaching creativity is needed related to the ability to teach to create conditions that cause students to feel peaceful and aroused in learning, therefore teacher teaching creativity is very important to improve student self-efficacy, and teacher teaching creativity can be measured by indicators of choosing learning methods that are commensurate with needs, varied learning media, learning spaces adapted to the context of the material, imitating learning models that are considered successful, creating new learning models that make learning media and displaying problems that provoke children to ask questions.

Teachers' teaching creativity as measured by questionnaire tested to 20 respondents, totaling 20 statements with grades 1 to 4, based on the research results of teacher's teaching creativity obtained a maximum score of 80, minimum score of 55, mean score (average) 66, score median 64, mode score 62 and standard deviation score 6.5.

Self-efficacy is human confidence and confidence in his own abilities which refers to self-motivation with full optimism and hope to solve a problem, overcome obstacles and complete tasks without feeling pessimistic in order to achieve certain goals that affect his confidence in learning. Self-efficacy can be measured by magnitude (level of difficulty of the task), generality (generalization) and strength (strength of belief).

Self-efficacy of students in grade v SDN Sukamaju 03 was measured by a questionnaire of 20 respondents and 20 statements with grades 1 through 4, based on the results of the student's self-efficacy research obtained a maximum score of 80, a minimum score of 57, a mean score (average) 67, 4, median score of 66.5, mode score of 80 and standard deviation score of 6.8.

The Relationship between Teachers' Teaching Creativity and Self-Efficacy of Class V Students at SDN Sukamaju 03, District of Cigudeg, Bogor Regency. Based on the test results using the correlation test *product moment*, the correlation between teacher teaching creativity (X) with student self-efficacy (Y) obtained a value of $r_{count} = 0.790$ and r_{table} for 20 is 0.444 at a significant level

of 5% thus $r_{\text{count}} > r_{\text{table}}$ ($0.790 > 0.444$) then H_0 is rejected, which means there is a significant relationship between creativity teaching self-efficacy of teachers with students. Thus the results of the description are expected that teachers can get used to be more creative in teaching to bring students in growing their own self-efficacy, if students already have high self-efficacy then students will easily reach the goals students want.

Based on testing the hypothesis proving the relationship of teacher teaching creativity with student self-efficacy, the regression test obtained a constant value (a) of 12,527 and a constant value (b) of 0.836 then the regression equation $Y = 12.527 + 0.836X$ this means that the value of teaching creativity of teachers 1 then the average value of students' self-efficacy will increase 0, 836. And the value of b in the above regression calculation is positive, it can be concluded that the relationship between teacher's teaching creativity and student's self-efficacy is a relationship that is directly proportional meaning if the creativity of teaching a teacher is good then self-efficacy students will increase. Of the significance of the regression equation obtained F value calculated of 29.840 and F_{table} by 4.41 with a level of 5% thus H_0 is rejected, which means there is a significant relationship between creativity teaching self-efficacy of teachers with students.

This study received an effective contribution $R^2 = 0.624$ which showed that 62.4% of the teaching creativity of the teacher affected the students' self-efficacy, the remaining 37.6% was influenced by other factors which were not analysis in this study. And the coefficient results obtained value $r = 0.790$ which indicates a strong relationship between teacher teaching creativity and student self-efficacy.

4. CONCLUSION

Based on the results of testing the hypothesis proves the relationship of teacher teaching creativity with student self-efficacy. The test results using *product moment*, the correlation between teacher teaching creativity (X) with student self-efficacy (Y) obtained a value of $r_{\text{count}} = 0.790$ and r_{table} for 20 is 0.444 at a significance level of 5% thus $r_{\text{count}} > r_{\text{table}}$ ($0.790 > 0.444$) then H_0 is rejected, which means there is a significant correlation between creativity teaching self-efficacy of teachers with students. Regression of regression calculation is done, the constant and the coefficients obtained from column B, $Y = 12\ 527 + 0,836X$ obtained by analysis of sig = 0.000 < 0.05 or H_0 is rejected. Thus there is a relationship between teacher's teaching creativity and the self-efficacy of students in grade v SDN Sukamaju 03, from the significance of the regression equation, the F value is calculated 29.840 and the F_{table} value is 4.41 with a sig value of 0.000, so that $F_{\text{count}} > F_{\text{table}}$ then there is a relationship which is significant between teacher teaching creativity (Variable X) and student self-efficacy (Variable Y). And this research is to get $R^2 = 0.624$ 62.4% showed their creativity variables affect self-efficacy of teachers to teach students, the remaining 37.6% is influenced by other factors such as physical factors, psychological factors, fatigue factors, family factors, and community factors.

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