Journal of Teaching and Learning in Elementary Education (JTLEE)
Vol. 5 No. 2, August 2022

Printed in Indonesia
ISSN (Print) : 2615-4528
ISSN (Online) : 2622-3023
DOI: http://dx.doi.org/10.33578/jtlee.v5i2.7938

The Effects of Project Based Learning Model toward Students' Creative Thinking Skill on Civics Subject

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Received: July 29th, 2022 Revised: August 29th, 2022 Accepted: August 31st, 2022

Abstract

This study aimed to determine the effects of the Project Based Learning model on students' creative thinking skills in Civics subject on Concepts, Values, Morals and Norms topic. This is a quantitative research, using a quasi-experimental method with a non-equivalent control group design. Subjects of this research were 74 second year students in class A and B of Elementary School Teacher Education Program, Nusa Cendana University. Results were analyzed and tested for its t value through independent sample t test using IBM SPSS Statistics v.16 for Windows. Data analysis result showed that the value of independent sample t-test was 0.020 <0.05. This indicated that there was no enough evidence to accept Ho. Therefore, it could be concluded that there was a positive and significant effect of project based learning model on creative thinking skills in Civics subject comprising Concepts, Values, Morals and Norm material of PGSD Students at Nusa Cendana University, Kupang.

Keywords: *creative thinking skills; learning model; project-based learning*

1. INTRODUCTION

The rapid development of technology triggers increasingly fierce competition in the world. To compete in the respective competition, one needs to equip oneself with skills relevant to these developments. These skills can be obtained through education called 21st century skills or known as 4Cs (*Critical thinking, Creativity, Collaboration ad Communication*).

Kristiani et al., (2017) proposed that creativity is one of a person's successes as one competes in the world's recent development. This is because creativity can help someone in solving problems both on small and large scale. In addition, Anazifa & Djukri (2017) claimed that creativity is needed to prepare students to enter working world. Therefore, school curriculum yields creativity as one of the skills students need to possess.

Hybrid learning needs to be improved in order to achieve these four skills, one of which is by applying the right model in classroom learning (Nuryati et al., 2020). One applicable model to support implementation of these skills is project-based learning (PjBL) model. According to

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(Nuryati et al., 2020; Ridlo et al., 2020; Safitri & Suparwoto, 2018; Yamin et al., 2020; Yustina et al., 2020) stated that this learning model can create independence, collaboration and increase morale and self-esteem during learning because they undergo learning in accordance to their interests. Furthermore, it is stated that learning using Project based learning model can be done by providing opportunities for them to conduct studies based on students' theme of interest and the condition of the students and the results are different. This certainly can enhance students' creativity and support hybrid learning during the pandemic. Further idea was stated by (Dinantika et al., 2019; Maula et al., 2014; Nasution et al., 2021; Sumarni & Kadarwati, 2020) that Project based learning model uses real-world problems as a context students can learn so they can practice their critical thinking and problem solving skills as Project based learning also helps providing solutions to emerging problems. Similar idea was also suggested by (Hairunisa et al., 2019; Umamah & Andi, 2019) that this model directly involves students to produce a project including independent and group projects. Students involvement in solving these problems can also increase their creativity in solving problems. In addition, students involved in Project based learning are involved in authentic projects to help them form concepts that have been proved as applicable in real world (Kusadi et al., 2020).

Facts found in field based on observations of Civics learning at the Elementary School Teacher Education Program, Nusa Cendana University, during hybrid learning, several problems were identified. First, learning models applied in hybrid learning did not vary even though the use of varied & innovative learning models can improve learning quality in classroom (Nuryati et al., 2020). Second, students' lack of creativity to solve problems given by lecturers was indicated by solution they offered did not vary though they were given real problem related to learning. This is because students were not accustomed to be independent and creatively challenged in designing their own problem solving (Lely, Putra, & Syahrilfuddin, 2020). Third, concepts, values, morals and norms are materials often discussed in Civics learning. However, it was found that students had not fully applied the theory to solve problems related to concepts, values, norms and morals with various solutions.

Based on the problem statements, a solution is needed to increase their creativity in solving real problems encountered in everyday life related to concepts, values, norms and morals. Hairunisa et al., (2019) stated that creativity can be obtained by applying innovative learning models in order to acquire soft skills when entering working world. One of the learning models that can be applied is the Project based learning model.

This research is different from other research in terms of material (Dinantika et al., 2019; Maula et al., 2014; Nasution et al., 2021; Sumarni & Kadarwati, 2020) in

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which the material includes concepts, values, norms and morals have never been used as material in previous research as well as locations and research subjects.

Based on this description, a research entitled the effect of project based learning model on students' creative thinking skills in Civics course will be conducted. The purpose of this study is to determine whether there is effect of project based learning (Project based learning) model on students' creative thinking skills in those topics.

2. RESEARCH METHODOLOGY

This is a quantitative study aimed to observe effects of project based learning (PBL) model on students' creative thinking abilities using a quasi-experimental design. The quasi-experimental design used was nonequivalent control group design. In this design, there are pretest and posttest for control and experimental groups. This design has a control group but cannot completely function to control other variables. This study consisted of two groups which were control and experimental group. The experimental group consists of students who are treated using project based learning model while control group is the group subjected to conventional learning model. This research was conducted at Elementary School Teacher Education Program, Nusa Cendana University, Kupang. This location was chosen /to conduct the research because similar study had never taken place in this education program and observations result revealed that there was a problem with students' low creative thinking ability to solving problems in Civics courses on Concepts, Values, Morals and Norms. Population of the study was the 4th semester students of Elementary School Teacher Education Program from class IV-A to IV-E. Samples were taken randomly from class IV-A and IV-B totaling 74 people. The experimental class is class IV-A meanwhile the control class is class IV-B. Data collection technique used are observations to determine teacher's activities in carrying out learning process and student activities in responding to the hybrid learning process given by lecturer in Civics course using a project based learning model and tests are used to measure students' creative thinking skills in solving problems in Civics course on concepts, values, morals and norms. The form of test used in this study is a problem-solving essay test for concepts, values, morals and norms material to measure students' creative thinking skills. Moreover, test instrument in this study was in form of evaluation tool set that formed 5 pre-test questions and 5 posttest questions. Indicators of creative thinking questions can be seen in the following table 1. creative thinking skill indicators.

Table 1. Creative Thinking Skill Indicators

No	Aspects	Indicators
1.	*Fluency*	a) Proposing multiple answers, ideas, solutions and questions b) Giving plenty ways or suggestions to do various things

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		c) Consider more than one answer
2.	*Flexibility*	a) Creating various ideas, answers and questions b) Able to Perceiving a problem using different insights c) Able to alter approaches or idea
3.	*Originality*	a) able to produce unique and new terms b) able to create unusual combinations of parts or elements
4.	*Elaboration*	a) develop, add, and enrich an idea b) able to classify details of an object to be more attractive.

The instrument used was essay test items adjusted to Fluency, Flexibility, Originality and Elaboration aspects as shown in table 2 describing Creative Thinking Skill Instrument.

Tabel 2 Creative Thinking Skill Instrument

No	Aspects	Question
1.	*Fluency* (Proposing multiple answers, ideas, solutions and questions, Giving plenty ways or suggestions to do various things, Consider more than one answer)	1) Why values of Pancasila must be described in norms of society life? 2. Values of Pancasila contain relations between entitlement and responsibility. Explain the statement!
3.	*Flexibility* (Creating various ideas, answers and questions, Able to Perceiving a problem using different insights, Able to alter approaches or idea)	2) What will happen if Pancasila is not implemented in daily life? How do we afford to preserve values of Pancasila as society, nation and state life philosophy?
4.	*Originality*	4) Why was Pancasila chosen as foundation of Indonesia? 5) What objective will Indonesian achieve with the existence of Pancasila?
5.	*Elaboration*	6) Present rational proofs stating that Pancasilais fundamental values for Indonesia!

Data analysis technique used prerequisite test and hypothesis testing. The prerequisite test consists of normality test and homogeneity test. Data normality test was conducted to determine whether data was normally distributed or not. To

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portray data normality, IBM SPSS Statistics v.16 for Windows was used using Kolmogorov-Smirnov technique. Determination criteria were done by comparing the value of sig. (2-tailed) in Kolmogorov-Smirnov table with the significance level of 0.05. Thus, the principle for decision making is that if *p* of K-S coefficient is > 0.05, then data is normally distributed. On the other hand, if *p* of K-S coefficient is < 0.05, then data is not normally distributed.

Homogeneity test or variance similarity test is a test to observe whether variances a population number are similar or not. In this study, the homogeneity test was done using IBM SPSS Statistics v.16 variance test for Windows. The principle for decision making in homogeneity test is if the significance value is < 0.05, then the variance of two or more population groups is inhomogeneous whereas if the significance value is > 0.05, then the variance of two or more population groups is homogeneous.

Hypothesis testing is used if data is normally distributed, and has homogeneous variance. In this study, the hypothesis is calculated using IBM SPSS Statistics v.16 for Windows with independent *t* test technique. The decision making is based on significance value of the SPSS output in which if the value of sig, <0.05 (Project-based learning model affects students' creative thinking skills) and if the value of sig, > 0.05 (project-based learning model does not affect students' creative thinking skills). Prerequisite tests and hypothesis testing were used as data analysis techniques. The prerequisite test consists of normality and homogeneity test. Normality test is carried out to identify whether data is normally distributed or not. To determine normality, IBM SPSS Statistics v.16 for Windows was used along with Kolmogorov-Smirnov technique. The criteria were determined by comparing the value of sig (2-tailed) in the Kolmogorov-Smirnov table with the level of the significance of 0.05. Thus, if *p* of the K-S coefficient is > 0.05, then data is normally distributed; whereas if *p* of the K-S coefficient is < 0.05, then data is not normally distributed.

Homogeneity test or variance similarity test is a test to find out whether variances of a number of populations are similar or not. IBM SPSS Statistics v.16 variance test for Windows was used for homogeneity test in this study. If the significance value is < 0.05, then the variance of two or more population groups is inhomogeneous. However, if the significance value is > 0.05, then the variance of two or more population groups is homogeneous.

Hypothesis testing is used if data is normally distributed and has a homogeneous variance. Hypothesis is calculated using IBM SPSS Statistics v.16 for Windows with independent *t* test technique. Decision is made based on significance value of SPSS output that is if the value of sig, < 0.05 (project-based learning model affects students' creative thinking skills) and if the value of sig, > 0.05 (project-based learning model has no effect on students' creative thinking skills).

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3. RESULT AND DISCUSSION

The results confirmed that there was an effect of project based learning model on students' creative thinking skills. The research was conducted first through prerequisite tests which were normality and homogeneity test. Next, hypothesis test was carried out using *t*-test. The normality test result is presented in the following table 3. Normality Test.

Table 3. Normality Test

Score		Kolmogorov-Smirnov[a]		
		Statistic	df	Sig.
C T S Learning Result	Exp	.125	37	.200*
	Contrl	.155	37	.072

Based on the data from normality test using IBM SPSS Statistics v.16 for Windows, it can be seen that data was normally distributed as the significance value in the Kolmogorov-Smirnov column for experimental class was 0.2 > 0.05 and in control class 0.072 > 0.05. The homogeneity test was then carried out with the results presented in the following table 4. Variance Homogenity Test.

Table 4. Variance Homogeneity Test

		Levene Statistic	df1	df2	Sig.
CTS Learning Result	Based on Mean	.067	1	74	.796

The results of homogeneity test implies that data was homogeneous because the significance value based on Mean in the Tests Homogeneity table was 0.796 > 0.05. Thus, a *t* test could be carried out using independent sample *t* test to observe the effect of treatment using of the project based learning model on students' creative thinking skills in experimental class. The results of the *t* test can be seen in the following table 5. independet samples test.

Table 5. Independent Samples Test

		t-test for Equality of Means		
		Sig.(2-tailed)	Mean Difference	Std. Error Difference
CTS Learning Result	Equal variances assumed	.020	5.862	2.454

It is portrayed in the independent samples test table that the 2-tailed significance value was smaller than 0.05 (0.020 < 0.05) which indicated that Ho was rejected and Ha was accepted, establishing a positive and significant influence from the use of the project based learning model on creative thinking skills of Elementary School Teacher Education Study Program students, Nusa Cendana University, Kupang in Civics course related to Concepts, Values, Morals and Norms topic.

PjBL model applied in experimental group encouraged students to thoroughly

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explore problem presented to them and search for problem solution through poster making project related to problems of values, norms and morale concept. This conditioning assisted students to plan, construct, and manage various resources to gather information and to solve problem creatively. Then, creative thinking skill test was administered as implementation of creative learning implementation using project based learning model. This was in line with Maula, et.al (2014) who stated that PjBL treatment familiarized students to think creatively in handling problems given to them. The average score result of creative thinking skill (CTS) test was presented in table 6.

Table 6. Averaga Score of Creative Thinking Skill

CTS Aspects	Experimental Class	Control Class
Fluent	3.50	3.50
Flexible	3.65	3.50
Original	3.50	3.50
Elaborate	3.50	3.50

Test result presented in the table confirmed that the experimental group's average score of flexibility aspect was higher than control class. In PjBL syntax, students were conditioned to cooperate in identifying, analyzing, and solving the given problem therefore team collaboration stimulated students to voice various ideas regarding the problem. This condition cultivated the flexibility aspect of creative thinking skill in which students stated their own perception of a problem.

Relying on explanation of the results presented, it is confirmed that the project based learning model affected students' creative thinking skills in Civics course. The model encouraged their direct involvement in learning process. This model improved their ability to think and create new ideas that were different from existing ideas. Thus, this idea can be realized into a creative product and boost their confidence. In line with the finding, Rafik, et al (2022) stated that the Project based learning model can improve creative thinking skills due to its nature to link theory and practice which makes problem solving, collaboration and communication skills get more developed. Sari et al (2019) also suggested that projects in learning using Project based learning model were generated through students' ideas in solving real problems therefore they were directly involved in learning process. The various ideas allow real problems to be solved in multiple ways. In contrast to control class who were not given treatment using Project Based Learning model, students were not facilitated to generate diverse ideas which caused their creative skills were not properly facilitated and their creativity level was lower than the experimental class.

The project-based learning model was carried out in experimental class of Civics course on concepts, values, morals and norms. There were five stages of project-based learning model applied in this study which were *engage, explore, investigate, create, and share*. In engage stage, learning process began by asking basic

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questions about concepts, values, morals and norms. Then it proceeded with explore stage, in which students were asked to make a poster related to Concepts, Values, Morals and Norms. Students were given the freedom to explore in terms of concepts as well as tools and materials needed in poster design. Students were given one week to create the poster. Next, in investigation stage, students were asked to search sources of information related to project assignments they were about to do in order to produce interesting, constructive, new and different ideas. After that, in create phase, students began constructing ideas they had developed into poster products, and finally in the last stage, they presented the final products of the projects they had worked on meanwhile lecturers conducted posttest assessments and reflections with students.

4. CONCLUSION

Based on results and discussion of the study conducted to identify the effect of project-based learning model on creative thinking skills of PGSD students at Nusa Cendana University, Kupang, regarding concepts, values, morals and norms material in hybrid or limited face-to-face learning, it was revealed that the value of independent sample *t*-test results was 0.020 < 0.05. Therefore, Ho was rejected and Ha was accepted, where there was an impact of project based learning model toward creative thinking skills on concepts, values, morals and norms material of Elementary School Teacher Education Program students at Nusa Cendana University, Kupang. Project based learning model helped students to develop and improve their creative thinking skills. During limited face-to-face or hybrid learning period, teachers and lecturers may choose the Project based learning model as an alternative that to apply in learning process to support and improve the creative thinking skills of students. Obviously, teachers and lecturers need to consider the suitability of students' characteristics and materials with the learning model they were going to apply.

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ISSN (Print) : 2615-4528
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