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A COMBINATION OF THE PROJECT BASED LEARNING MODEL AND VALUE CLARIFICATION TECHNIQUE IN IMPROVING STUDENTS' CRITICAL THINKING SKILLS

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Abstract. Citizenship education learning is synonymous with learning that contains boring material because the learning model applied is monotonous and teacher-centred. This research aimed to analyse the effectiveness of the combination of the Project Based Learning (PjBL) and Value Clarification Technique (VCT) models in improving students' critical thinking skills. This study used a quantitative approach. The research population was junior high school students at SMP Negeri 21 Banjarmasin City. The research sample was 120 students from four groups selected random sampling technique, namely classes, that based on the homogeneity test, had relatively the same abilities. This research used a Quasi Experimental method with a Non-equivalent Control Group Research design. Data were analysed using the N-Gain test and Paired Sample Test (t-test) with the help of the SPSS 21.0 for Windows program. Based on the results of the analysis, it was known that (1) There were differences in students' critical thinking skills between the application of the Project Based Learning model and the application of the expository learning model; (2) There were differences in students' critical thinking skills between the application of the Value Clarification Technique model and the application of expository learning; (3) There were differences in students' critical thinking skills between the application of a combination of Project Based Learning and Value Clarification Technique and the application of expository learning. The highest N-Gain value for students' critical thinking skills was when applying a combination of Project Based Learning and Value Clarification Technique. Based on this, the combination of PjBL and VTC could be used as an innovative citizenship learning model solution to improve students' critical thinking abilities according to the demands of 21st century skills.

INTRODUCTION

Education is a necessity for human life throughout their lives, both as individuals, social groups, and as a nation and state. Education is also a human effort to expand knowledge in order to form values, attitudes and behavior (Syauki et al., 2019). Education can be used as a means to develop the abilities of the younger generation to be able to face the rapid flow of globalisation (Mukhlisotin, 2022). Education is a need for human life that must be fulfilled and achieved as a life goal (Purnama et al., 2021). Education influences student learning

outcomes and influences the quality of a nation's human resources in the future (Xu et al., 2020).

The world development of the 21st century is marked by the use of information and communication technology in all areas of life, including education. The ability to think critically, solve problems and collaborate are important skills for entering the 21st century educational life (Evi Yupani & Widana, 2023). Schools also require students to have four of the 21st century skills or qualities, abbreviated as 4Cs, namely communication, collaboration, critical thinking and problem solving, and creativity and innovation. Learning in the context of the 21st century learning, especially in the 2013 curriculum, requires student learning materials through examples, applications and real experiences both inside and outside school (Rahayu et al., 2022). Cevik & Senturk propose five main groups of skills, namely information and technology literacy, critical thinking and problem solving skills, entrepreneurial and innovation skills, social responsibility and leadership skills, and career awareness (Cevik & Senturk, 2019).

Carrying out teaching and learning activities in schools is certainly not merely a transformation of knowledge, but as education aimed at forming a perfect person not only cognitively, but also emotionally and psychomotorically, especially for Citizenship Education subjects (Widana et al., 2023). Citizenship education aims to provide knowledge and understanding, especially knowledge and understanding of the national system and political history, as well as developing understanding, skills, motivation and action by directly experiencing citizenship issues (Carretero et al., 2015).

Citizenship education has become an integral part of national educational facilities and praxis to educate the lives of the Indonesian people through "values-based education". The systematic structure of citizenship education is built on the basis of the following paradigm: First, citizenship education is designed as a subject that aims to develop individual potential to become Indonesian citizens with noble, intelligent, participatory and responsible character. Second, citizenship education is theoretically designed as a subject that includes cognitive, affective and psychomotor dimensions that unite or penetrate and integrate the thoughts, values, concepts and morals of Pancasila, democratic citizenship and citizen advocacy. Third, citizenship education is designed programmatically as a subject that emphasizes content-embodying values and learning experiences in the form of various behavioural patterns that are realised in everyday life and which become a necessity for citizens in life, society, nation and state as further development of the thoughts, values, conceptions and morals of Pancasila, democratic citizenship and national defense (Tyas & Mawardi, 2016).

However, facts on the ground show that Citizenship Education learning is often different from what is expected, shifting slightly from government expectations (Widiana et al., 2022) . Learning Citizenship Education is synonymous with learning that contains boring material (Hatami, 2020). The low level of student activity and learning outcomes in citizenship learning is a learning model that is implemented monotonously and is teacher-centered so it tends to make students bored (Sanjaya et al., 2022). A teacher's success in creating a conducive classroom atmosphere must be supported by his skills in managing the classroom, learning media, and learning models (Firman, 2022). Issues that are not much different are also experienced by Citizenship Education teachers who teach at SMP Negeri 21 Banjarmasin. Based on the results of interviews with the Citizenship Education teacher, RF, when explaining the material, only some of them paid attention and were active, especially

when learning was carried out during the day. Teachers can try various strategies, methods or learning models (Hasibuan & Rahmawati, 2019).

Citizenship education must be packaged innovatively and adapted to needs so that the quality of education can be improved. Apart from that, education is based on the needs of the 21st ce ntury, namely critical thinking skills, must offer students the widest possible opportunities to practice these skills to the maximum (Adham & Nugroho, 2019). Learning is no longer teacher-centred, but student-centred. The philosophy of a student-centred learning approach is to encourage students to participate and motivate them to learn (Abdigapbarova & Zhiyenbayeva, 2022). In all pedagogical guidelines, the importance of two principles is emphasised, namely taking into account the age characteristics of students and implementing education based on an individual approach (Jurakulovna et al., 2022).

One learning model to allow students to have these skills is the Project Based Learning (PjBL) model. The PjBL model is an innovative learning model that focuses on contextual learning through complex activities (Indrawijaya & Siregar, 2022; Sumandya et al., 2023) and has a lot of potential to improve the 21st century skills and engage students in real-world tasks (Aksela & Haatainen, 2019). Several research findings conclude that the PjBL model has proven to be effective in developing critical thinking skills, student activeness and student creativity (Guo et al., 2020). PjBL is an effective method for developing the 21st century skills (Safaruddin et al., 2020).

Apart from the project-based learning model, another alternative model that can be applied in Citizenship Education learning is the Values Clarification Technique (VCT) model, which involves active learning and creating a participatory classroom atmosphere. Learning with the VCT model directs students to be directly involved in learning, requiring activities and interaction with other students (Akhwani & Nurizka, 2021). According to research results, the VCT method can improve student character (Anwar et al., 2023) and influence student learning outcomes (Febriyani et al., 2022).

Based on this description, it is known that the project based learning model and Value Clarification Technique have a positive influence on the learning process. Therefore, in this research these two things were collaborated in the Citizenship Education learning process to see their effect on students' critical thinking abilities. This research is different from previous research because this research will also control students' initial abilities. Initial ability is one of the determining factors for student success in learning. Students' core competencies are a set of important knowledge and skills that they have before students undertake experiential learning (Umbara & Nuraeni, 2019). The better the student's basic abilities, the better the student's ability to learn the material they are studying (Hots et al., 2022).

Previous research and the current research both conduct experimental research to increase students' interest in learning Citizenship Education. However, the novelty of this research is that it combines two learning models, namely the PjBL and VCT models. Based on this, the aim of this research is to determine the effectiveness of implementing a combination of the PjBL and VCT models in improving students' critical thinking skills.

METHOD

This research used a quantitative approach with experimental methods. The research was conducted on junior high school students in Banjamasin City in the even semester of the 2022/2023 academic year. This research began in October and ended in March 2023. This

research used a quasi-experimental design with the Nonequivalent Control Group Design type. The research sample consisted of 120 students in four groups of students, 3 experimental classes and 1 control class, previously an equality test of students' critical thinking skills was carried out using a homogeneity test. Experimental class 1 applied the Project Based Learning learning model, experimental class 2 applied the value clarification technique model, experimental class 3 applied a combination of the Project Based Learning model and the value clarification technique model, while the control class applied the expository learning model. This research design can be seen in the following table.

Table 1. Research design

Class	Treatment	Critical Thinking Skills
Experiment	X_1	O_1
	X_2	O_2
	X_3	O_3
Control	X_4	O_4

Information:
X1 = Implementation of PjBL
X2 = Implementation of PCV
X3 = Implementation of a combination of PjBL and VCT
X4 = Application of expository learning
O1 = Students' critical thinking skills in PjBL implementation class
O2 = Students' critical thinking skills in VCT application class
O3= Students' critical thinking skills in class implementing a combination of PjBL and VCT
O4 = Students' critical thinking skills in model application class with expository learning

Descriptive analysis techniques and inferential statistical techniques are used as data analysis techniques. Descriptive analysis methods such as lowest, highest, mean and deviation standard values are used to describe the data. In addition, an N-Gain analysis test was carried out on students' critical thinking. N-Gain is the difference in students' critical thinking scores between project-based learning models, value clarification techniques, a combination of project-based learning and value clarification techniques, and the application of expository learning models. Next, the results of the N-Gain test calculations were interpreted into several effectiveness interpretation categories in the following table.

Table 1. N-Gain Value Effectiveness Category Table

N-Gain Percentage Value	Interpretation
<40	Ineffective
40–55	less effective
56–75	Effective enough
>76	Effective

Sumber: Hake, R, R. (1999).

Based on the criteria for interpreting the effectiveness of the N-Gain value, the learning model was effective if the results of students' critical thinking skills obtained an N-Gain value >56.

In answering the hypothesis that had been formulated, it was necessary to carry out analysis using the t-test with the help of the SPSS 21.0 for Windows program. Hypothesis testing in this research was carried out to determine whether there were differences in students' critical

thinking skills between the application of learning with the Project Based Learning model, Value Clarification Technique, combination Project Based Learning with Value Clarification Technique, as well as the application of expository learning models.

RESULTS AND DISCUSSION

Before carrying out the treatment, the researcher first carried out an analysis of the students' initial abilities for all groups that received treatment using a homogeneity test whose aim was to ensure that the sample groups had the same variance. From the results of the homogeneity test, it was known that the significance value was above 0.05, which could be concluded that the initial abilities for all groups had the same variance. The next step was to carry out learning for both the experimental class and the control class.

Hypothesis testing in this research uses the t-test (Paired Sample Test) with a significance level of 0.05 (5%), following are the results of hypothesis testing with the help of the SPSS 21.0 for Windows program.

Table 3. Paired Sample Test Results for Project Based Learning

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Critical thinking	11.48333	8.06644	1.04137	13.56712	9.39955	11.027	59	.000

The results of the t-test with paired sample tests for the experimental class and control class showed a significance value of 0.000 or <0.05 (5%), so it was concluded that Ho was rejected and Ha was accepted. It can be concluded that there is a difference in students' critical thinking abilities between the application of the PjBL model and the application of the expository learning model at SMP Negeri 21 Banjarmasin. In learning using the PjBL model, students are required to find answers to the problems in question themselves by using their thinking abilities to form a concept within themselves about the material being studied, so that during learning activities, students will use their thinking abilities and skills to the maximum.

This is in line with research on project-based learning which has been proven to be effective in developing critical thinking skills, student activity and student creativity (Guo et al., 2020; Purnadewi & Widana, 2023). PjBL is an effective method for developing 21st century skills (Safaruddin et al., 2020). PjBL equips students with the skills necessary for today's job market: communication, collaboration, creativity, and critical thinking (Almazroui, 2022). Citizenship education learning must be packaged innovatively and adapted to needs so that the quality of learning can improve. Apart from that, in accordance with what is needed in the 21st century, namely critical thinking skills, the learning carried out must provide students with as many opportunities as possible to develop these skills to the maximum (Adham & Nugroho, 2019) .

Table 4. Paired Sample Test Results for VCT

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Critical thinking	9.51667	6.07437	.78420	11.08584	7.94749	12.136	59	.000

The results of the t-test with paired sample tests for the experimental class and control class showed a significance value of 0.000 or <0.05 (5%), so it was concluded that Ho was rejected and Ha was accepted. So this means that there are differences in learning outcomes between the application of the VCT model and the application of the expository learning model. It can be concluded that using the VCT learning model can improve students' critical thinking skills. By implementing the VCT learning model, students are given the opportunity to be actively involved in learning, because the main target of the activity is maximum student involvement in the teaching and learning process.

This is in line with research results which show that VCT can improve student character (Anwar et al., 2023) and influence student learning outcomes (Febriyani et al., 2022). The VCT learning model includes active learning and creates a participatory classroom atmosphere. Learning that uses the VCT model directs students to be directly involved in learning, requires students to be active and interact with other students (Akhwani & Nurizka, 2021).

Table 5. Paired Sample Test Results of Project Based Learning and VCT

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Critical thinking	8.24138	5.51652	.72435	9.69187	6.79089	11.378	59	.000

The results of the T test with paired sample tests for the experimental class and control class showed a significance value of 0.000 or <0.05 (5%), so it was concluded that Ho was rejected and Ha was accepted. It can be concluded that there are differences in learning outcomes between the application of a combination of the PjBL and VCT models) and the application of the expository learning model.

Students' critical thinking skills in Citizenship Education learning by applying the PjBL, VCT model, a combination of PjBL and VCT as well as the expository learning model can be seen in the following table.

Table 6. Students' Critical Thinking Skills in Experimental and Control Classes

Statistic	Experiment Class			Control Class
	PjBL	VCT	PjBL + VCT	Expository
Mean	72,00	78,71	82,52	71,34

Statistic	Experiment Class			Control Class
	PjBL	VCT	PjBL + VCT	Expository
Median	70,00	80,00	80,00	70,00
Devitation Standard	12,31	11,94	8,04	8,46
Variance	151,60	142,68	64,68	71,66
Range	40	48	29	34
Minimum	50	50	66	54
Maximum	90	98	95	88

Based on this data, it is known that the average critical thinking skills of students in the experimental class are greater than those in the control class as seen in the following figure.

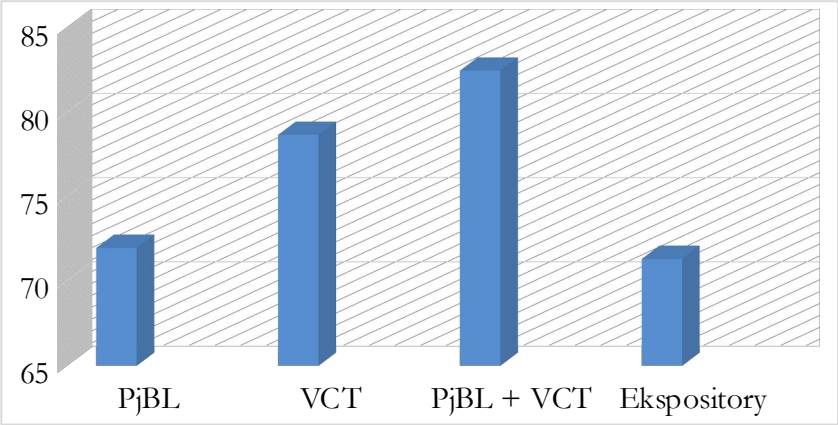

Image 1. Critical Thinking Skills in Experimental and Control Classes

Next, students' critical thinking skills scores were calculated using the N-Gain test which was interpreted based on the categories of interpretation of the effectiveness of the N-Gain scores. This calculation was to determine the difference in the average critical thinking scores of students in the experimental class and the control class. The results of calculating the N-Gain value can be seen in the following table:

Table 7. Recapitulation of N-Gain Values for Students' Thinking Skills

Statistics	Experiment Class			Control Class
	PjBL	VCT	PjBL + VCT	Expository
Median	54,55	44,44	55,08	20
Variance	1365,54	1267,29	1385,82	766,122
Devitation Standar	36,95	35,59	37,85	27,67
Range	89	90,91	91,24	91
Minimum	11	9,09	11,76	9
Maximum	100	100	100	100
N-Gain Score (%)	57,17	57,72	59,93	34,48

Based on the table above, it can be seen that the experimental class that received the PjBL learning model treatment obtained an N-Gain value of 57.17, the VCT learning model treatment received an N-Gain value of 57.72 and the PjBL and VCT combination model treatment obtained an N- Gain of 59.93. Meanwhile, the control class applied expository learning with an N-Gain value of 33.48. Thus, it can be concluded that treatment in the experimental class with either the PjBL, VCT model or a combination of PjBL and VCT had

proven to be quite effective in improving students' critical thinking skills, compared to expository learning. The difference in N-Gain values for each treatment can clearly be seen in the following picture.

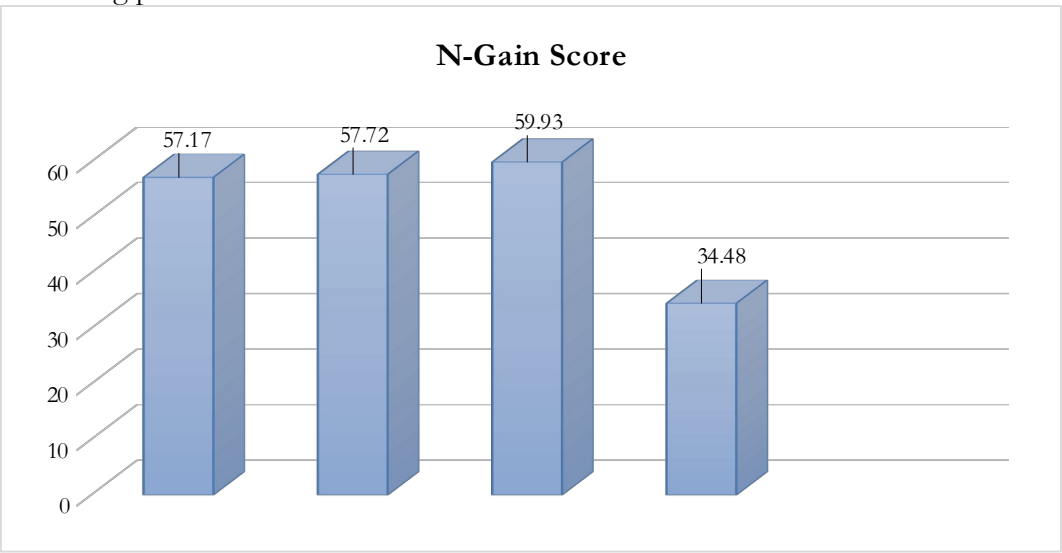

Image 2. N-Gain Value of Students' Critical Thinking Skills

From the picture above, it can be seen that the highest N-Gain test value was obtained when applying a combination of the PjBL and VCT models. This is in line with research results which stated that the application of the PjBL model had proven effective in developing critical thinking skills, student activity and student creativity (Guo et al., 2020). PjBL is an effective method for developing the 21st century skills (Safaruddin et al., 2020). Citizenship education must be packaged innovatively and adapted to needs so that the quality of education can be improved. In addition, education that is based on the needs of the 21st century, namely critical thinking skills, must offer students the widest possible opportunities to practise these skills to the maximum (Adham & Nugroho, 2019).

The results of the T test using paired sample tests for the experimental class and control class showed a significance value of 0.000 or <0.05 (5%) and a calculated t value of 12.136 > t table 1.67155, so it was concluded that Ho was rejected and Ha was accepted. There was a significant difference in students' critical thinking skills between the application of the VCT model and the application of the expository learning model. This is in line with research results which show that VCT can improve students' character (Anwar et al., 2023) and influence student learning outcomes (Febriyani et al., 2022). The VCT learning model combines active learning and creates an inclusive classroom atmosphere. Learning with the VCT model directs students to be directly involved in learning, requiring activities and interaction with other students (Akhwani & Nurizka, 2021).

The results of the T test using paired sample tests for the experimental class and control class showed a significance value of 0.000 or <0.05 (5%) and a calculated t value of 11.378 > t table 1.67155, so it was concluded that Ho was rejected and Ha was accepted. There are differences in the results of students' critical thinking skills between the application of a combination of PjBL and VCT models and the application of expository learning. It can be concluded that students' critical thinking skills when applying the combined learning model (Project Based Learning and Value Clarification Technique) have significant differences from expository learning.

CONCLUSION

Based on the results of the analysis, it is known that (1) there are differences in students' critical thinking skills between the application of the Project Based Learning model and the application of the expository learning model; (2) there are differences in students' critical thinking skills between the application of the Value Clarification Technique model and the application of expository learning; (3) there are differences in students' critical thinking skills between the application of a combination of Project Based Learning and Value Clarification Technique and the application of expository learning. The highest N-Gain value for students' critical thinking skills is when applying a combination of Project Based Learning and Value Clarification Technique. Based on this, the combination of PjBL and VTC can be used as an innovative citizenship learning model solution to improve students' critical thinking abilities according to the demands of the 21st century skills.

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