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The Impact of Problem-Based Learning Model on Critical Thinking Ability in the Education of Police Officers

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Abstract

The purpose of this study was to determine the effect of Problem Based Learning on the critical thinking skills of Police NCO students. A quantitative approach was used in this study and this research was designed using a true experimental design approach. The method used in this research is the Quasi Experiment method (quasi-experiment). Data collection tools using observation, validation, and testing. Data Analysis Using One Simple Kolmogorov-Smirnov Data Analysis Technique. The analysis test results show that there is an effect of problem-based learning on critical thinking skills in the control and experimental classes with a significance level of 5% (0.000 < 0.05). This proves that there has been an increase in the experimental class treated with Problem Based Learning on Critical Thinking. Therefore, it can be concluded that the Critical Thinking ability of Police NCO students in the experimental group was higher than the control group. Problem Based Learning has a positive effect on the critical thinking skills of Police NCO students.

Keywords: Problem Based Learning; Critical Thinking Ability; National Police Formation Education.

1. Introduction

Critical thinking is becoming increasingly important as a skill because individuals need to make improvements to a series of important decisions that affect themselves and society in general (Halpern, 2003 in Butler, 2012). In other words, 30-year-old parents need to make more decisions today than they did in their thirties 20 years ago. As the amount of information and decisions increases, we may be in danger of having answers, but not knowing what they mean. Dressel & Mayhew (1954) outline four additional reasons why critical thinking is important. Critical thinking is a discipline, independent thinking that exemplifies the perfection of thinking that fits a particular mode or domain of thought. In critical thinking, we use our command over the elements of thought to adapt our thinking to the logical demands of the type or way of thinking critical thinking skills provide the goal of acquiring knowledge. Otherwise, the knowledge gained will only become a collection of facts. In other words, the development of critical thinking does not underestimate the importance of acquiring knowledge but helps to make knowledge acquisition more meaningful. Critical thinking skills can be applied to most of the activities and problems we face.

Students with a meaningful learning orientation have beliefs and behaviors associated with participation in the learning process that link new knowledge to existing frameworks, leading to deeper connections between concepts. There is a large body of literature examining each of these types of perspectives and orientations. However, they are not always studied as separate constructs. These research programs have revealed various perceptions of learning, especially among students, ranging from viewing learning as a task or a means to an end to seeing it as personal fulfillment. or coming to see things in a new way (Purdie, Hattie, & & Douglas, 1996). Critical thinking is also defined as an intellectual process and the ability to analyze, evaluate (Changwong, Sukkamart, & Sisan, 2018), conceptualize, apply, and synthesize information collected to take action or draw conclusions (Styron, 2014).

Education is a conscious and planned effort to create an atmosphere and learning process for

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students to actively develop their potential in the pursuit of spiritual, emotional, religious strength, self-control, personality, intelligence, noble character, and their own needs. develop skills. society, nation, and state. Meanwhile, the definition of training is an effort to instill, maintain, and improve skills and abilities by using certain methods or models that prioritize training so that the trainees are able and competent in doing their jobs.

Police education and training, which is abbreviated as Police Training and Education, is a conscious and planned effort to carry out a learning process to form a complete character and identity through the development of knowledge, attitudes, skills, and the ability to carry out tasks for oneself, the company, the state, and the community. carry out land management by their authority. and their professionalism. In addition, the education and training of the Indonesian National Police take place at the State Police School, abbreviated as SPN, which is part of the education and training of the Indonesian National Police Brigadier. All social classes are now facing a new era, the era of digitalization and modernization. The current era is an era where all walks of life experience many changes, such as lifestyle, mentality, cultural system, inclusive education, and the establishment of the National Police Academy. In the field of education, especially in the teaching process, there have been many changes and challenges. In the past, the learning process took place through two-way communication between Police NCO students and teachers, but now learning has become more complex and multi-paradigmatic.

Some of these results indicate that the learning process of students in education is still conventional so learning outcomes and critical thinking skills have not been maximized. One way to improve critical thinking skills is to use a problem-based learning model. This is supported by previous studies such as the research of Kusuma et al. (2019) which states that one of the strategies to improve critical thinking skills in primary school Police Officers is to use a problem-based quantum learning model. The results of another study by Redhana (2012) also showed that the use of a problem-based learning model with Socrates' questions could significantly improve the critical thinking skills of Police NCO students.

This study aims to determine and analyze the effect of problem-based learning on the critical thinking skills of Police Officers. The benefit of this research is to provide guidelines and a basis for problem-based learning and critical thinking skills in research and can be used as a reference for carrying out the learning process.

2. Method

The type of research that will be carried out is experimental research with a true experimental design approach with a Pretest-Posttest Control Group Design model. The method used in this study is the Quasi Experiment method (quasi-

experimental) with the reason that in this design there are two study groups, namely the experimental group and the control group. This type of nonequivalent control group design uses existing classes as a group, with the selection of classes that are estimated to be in the same state and condition (homogeneous).

The subjects of this research were taken from 2 groups, namely the experimental class group and the control class group through the cluster random sampling technique (Fraenkel, 2006). Considering that this research can't be conducted using random or random techniques, by taking classes that have homogeneous abilities in the implementation of learning (Cohen & Morrison, 2011).

In this study, two categories of independent variables were used, namely Problem Based Learning, and then for the dependent variable in this study was the ability to think critically in Pancasila Ideology Subjects at the State Police School of the Regional Police of East Java. The data analysis used in this research is hypothesis testing to determine the effect of Problem Based Learning on Critical Thinking Ability. The hypothesis test will be carried out using the T-test by looking for the differences between the two samples. The T-test in this study was conducted twice to find out the difference in test results in the experimental and control groups. A T-test was conducted to determine the effect of the application of the learning model on students' critical thinking abilities.

3. Result

The experimental class is given treatment in the learning process by using Problem Based Learning, while the control class is in conventional learning. These data were obtained by using a research instrument that has been carried out using a validity test. The description of the data in this study provides an overview of the results of research that has been done. The description of the data is done by using univariant descriptive data analysis including the mean, standard deviation, and graphs. The description of the data for the dependent variable of concept understanding competence was carried out on the pretest and posttest data. For independent variables using Problem Based Learning, as well as the interaction between the two variables.

The normality test aims to show that the sample data comes from a population that is normally distributed, this can be known by looking at the results of the significance calculation. The statistical test for normality of the data was carried out using the Kolmogorov-Smirnov (KS) test with the condition that the asymp value. Sig (2 tailed) obtained > 0.05, then the sample comes from a population that is normally distributed, but if the value of asymp. Sig (2 tailed) obtained <0.05, then the sample does not come from a normally distributed population (Sugiyono: 2006).

Table 1: Normality test results for Critical Thinking.

Tests of Normality

	Kelas	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Kemampuan Berpikir Kritis	Pretest Kelas Eksperiment	.172	25	.053	.887	25	.010
	Postest Kelas Eksperiment	.118	25	.200*	.964	25	.497
	Pretest Kelas Kontrol	.147	25	.171	.873	25	.005
	Postest Kelas Kontrol	.171	25	.058	.933	25	.104

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on these data, the results of the normalization test on the critical thinking data of Police Officers are shown in the table above. Therefore, giving this treatment affects critical thinking skills.

Another requirement that is required to carry out further testing is the homogeneity test of research subjects. The basis for decision-making in the homogeneity test is if the significance value is greater than 0.05, it is said that the variance of the two groups of population data is the same or homogeneous. However, if the significance value is less than 0.05, it is said that the variance of the two groups of population data is not the same or not homogeneous. A homogeneity test was conducted using the SPSS application, with the following results:

Table 2: The results of the homogeneity test of critical thinking.

Test of Homogeneity of Variances

Nilai Postest Berpikir Kritis

Levene Statistic	df1	df2	Sig.
1.055	1	48	.309

According to the data in table 2, the test results obtained the value of critical thinking skills, the sig value was greater than 0.05 and the data above had homogeneity variance.

Table 3: Test Results of Independent Samples T-test.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Berpikir Kritis	Equal variances assumed	1.055	.309	2.707	48	.009	6.600	2.438	1.698	11.502
	Equal variances not assumed			2.707	46.490	.009	6.600	2.438	1.694	11.506

Based on table 3, it was found that the sig value in the critical thinking ability data was 0.009, which was smaller than the 0.05 value, so it can be concluded that the results are by the hypothesis, namely the influence of problem-based learning models to improve critical thinking skills of Police NCO students.

According to the independent samples t-test test data in table 3 above, it can be seen that the significance value or p-value is 0.009 <0.05, so it can be concluded that there is a significant effect on the average value after being given treatment for critical thinking skills between the experimental class and the control class.

Because there is a significant average difference in critical thinking ability (after being given treatment) between the experimental class and the control class, the experimental class that uses Problem Based Learning shows a higher average critical thinking ability than the control class that uses conventional learning. The conclusion of Problem Based Learning learning affects the critical thinking skills of Police Officers.

4. Discussion

The conceptual framework for this study is the development of thinking skills strategies as a result of learning from experience. This study uses as a background the understanding of strategic thinking from the management literature, from which the definition of strategic thinking was developed. Cognitive science and extensive empirical work on skill development frame an "obtainable" view of the ability to think strategically, which is driven by the experience. Experiential learning theory establishes a theoretical framework for exploring which experiences stand out and how they contribute to the development of an individual's ability to think strategically.

Strategic thinking. The term strategic thinking comes from the management literature: "strategic thinking aims to find novel, imaginative strategies that can rewrite the rules of the competitive game; and to envision a potential future that is significantly different from the present" (Heracleous, 1998, p. 485).

Research on how best to improve an individual's strategic thinking skills focuses on specific methods, such as coaching, coursework, use of scenarios and simulations, and selected work experiences (i.e., special projects, business startups or turnarounds, scope enhancement, and line staff turnover; Bates & Dillard, 1993; Easterby-Smith & Davies, 1983; McCall, Lombardo & Morrison, 1988, 1989; Stumpf, 1989). The results show that the experience of doing corporate strategic planning work is beneficial. Other work experiences may provide different and perhaps related insights. However, many of these studies do not have a common definition, especially of what is strategic thinking, and consistent measurement.

Many of the previously cited researchers who conducted studies on student motivation and epistemological perspectives measured constructs using standardized scales and then correlated their results with traditional outcomes. In addition, much research has focused on how students approach individual study tasks rather than group study tasks. This study builds on previous work: (a) measuring student perspectives using interviews instead of a pencil and paper scale; (b) linking Student learning processes and not products to their framework; and (c) investigating the learning process through interactive and cognitive analysis of students' speech with their peers, rather than through rigorous problem-solving protocols alone. This study responded to an invitation (Blumenfeld, 1992) to extend research methods into a motivational orientation to include student interviews and observations in the classroom to create in-depth qualitative and situational analyzes (Kathleen Hogan, 1998).

Thinking ability is a reflective, critical, and creative thinking activity directed at intellectual processes that involve concept formation (conceptualization), software, analysis, and evaluation of information collected (synthesis) or obtained through observation, experience, reflection, and communication. based on belief (faith) and actions. Therefore, critical thinking is critical thinking which requires a high understanding and sharp analysis.

According to Sudarman, the Problem Based Learning model is a learning model that uses a learner approach that allows students to actively build knowledge and absorb the information they learn on their own. Related to this statement, Tan in Rusman also stated that problem-based learning is innovative learning because in its implementation the critical thinking skills of the NCO students are optimized very well so that the NCO students can develop their abilities independently. The existence of a relationship between the Problem Based Learning model that affects the improvement of students' critical thinking skills, will also directly affect student learning outcomes. Students who have carried out their learning using the Problem Based Learning model will make the best use of their thinking skills to maximize their learning outcomes. Based on the explanation above, it can be concluded that the application of the Problem Based Learning model affects the critical thinking skills of Police Officers.

The advantage of this research lies in the learning activities because during the learning activities the Police Officers actively participate in the discussions of their group of friends to solve the problems presented by the teacher. This is because the characteristics of the problem-based learning model can be a fun and practical learning environment for Police Officers. Due to the application of the problem-based learning model, the Police Officer Student first poses a problem related to the real world, then looks for a solution from the various information received from the teacher.

5. Conclusion

This study concludes that problem-based learning has an effect on critical thinking skills in the formation of police officers. The use of Problem Based Learning model learning becomes more active and fun for Police NCO students because Police NCO students better understand the various things they often experience in their daily lives, namely the scientific activities of the NCO Students are in the process of learning which affects the growth of psychomotor aspects. Learning Problem Based Learning model encourages the development of critical thinking through discussion, clarification, ideas, and evaluation of other people's ideas. However, both teaching methods were found to be equally effective in acquiring factual knowledge. Therefore, if teaching aims to improve critical thinking skills, then Problem Based Learning Model learning is more useful. For the Problem Based Learning Model to be effective, teachers must see teaching as a process of developing and improving the critical thinking skills of Police Officers to learn.

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