

The Influence of Use of the Problem Based Learning Model on Students' Critical Thinking Ability in History Subjects

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Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh model *problem based learning* terhadap kemampuan berpikir kritis siswa pada mata pelajaran Sejarah kelas XI IIS di SMA Negeri 7 Kabupaten Tangerang. Metode penelitian yang digunakan pada penelitian ini adalah kuasi eksperimen. Sampel penelitian berjumlah masing-masih 33 orang siswa pada kelas kontrol maupun eksperimen. Pengambilan sampel dilakukan melalui teknik nonprobability sampling. Instrumen utama yang digunakan yaitu tes esai sebanyak 7 butir soal yang kemudian dianalisis dengan uji-t. pengujian hipotesis menggunakan bantuan *microsoft excell* dengan uji-t dua pihak menggunakan rumus *polled varian* diperoleh nilai $t_{hitung} = 2,672 > t_{tabel} = 1,997$ dengan $\alpha = 0,05$ sehingga H_0 ditolak dan H_a diterima. Hal ini menunjukkan bahwa terdapat pengaruh model *problem based learning* terhadap kemampuan berpikir kritis siswa. *Model problem based learning* dapat digunakan sebagai rujukan dalam proses pembelajaran Sejarah untuk meningkatkan kemampuan berpikir kritis pada kompetensi dasar 3.6 Menganalisis pengaruh Perang Dunia I dan Perang Dunia II terhadap kehidupan politik global (LBB dan PBB).

Kata kunci: pembelajaran sejarah, model problem based learning, kemampuan berpikir kritis.

Abstract

This research aims to determine the effect of the problem based learning model on students' critical thinking abilities in the History subject class XI IIS at SMA Negeri 7 Tangerang Regency. The research method used in this research is quasi-experimental. The research sample consisted of 33 students each in the control and experimental classes. Sampling was carried out using nonprobability sampling techniques. The main instrument used is an essay test with 7 questions which are then analyzed using the t test. Hypothesis testing using the help of microsoft excell with a two-party t-test using the polled variance formula obtained a value of $t_{amount} = 2.672 > t_{table} = 1.997$ with $\alpha = 0.05$ so that $t_{amount} > t_{table} H_0$ rejected and accepted. This shows that there is an influence of the problem based learning model on students' critical thinking abilities. H_a problem based learning Model can be used as a reference in the History learning process to improve critical thinking skills in basic competencies 3.6 Analyze the influence of World War I and World War II on global political life (LBB and UN).

Keywords: historical learning, problem based learning model, critical thinking ability.

INTRODUCTION

Critical thinking is an ability that must be developed, practiced and continuously applied in the curriculum to involve students in active learning, namely activities that require students to analyze, synthesize and evaluate information to

solve problems and make decisions in order to hone critical thinking skills. Synder (in Septiwi, 2018). Therefore, in the learning process at school it is necessary to apply innovative learning models that can be a vehicle for the

growth and development of students' critical thinking abilities.

Providing further insight into the aims of history education in the formulation of the aims of history education in Indonesia, which states that history education aims to make students aware of the process of change and development of society in the dimension of time, and to build historical perspective and awareness in discovering, understanding and explaining identity. the nation's self in the past, present and future amidst world changes (Ministry of National Education, 2003).

In reality, the goals of history education have not been implemented optimally based on findings in the field. Based on initial observations conducted by researchers in class can conclude, and when answering questions does not include logical reasons, (b) The use of history learning methods and models that are applied are not yet varied and innovative so they do not support students to think critically, (c) minimal student involvement and student understanding of the material that has been provided. delivered by the teacher because the discussion was monotonous.

Conditions in the field in history subjects show problems regarding the learning process which causes students' low critical thinking abilities because they have not yet reached the critical thinking ability indicators. This is because the

problem that students often face in learning history is that students don't understand history lessons because students are lazy about learning and when learning takes place students don't want to ask questions and don't have curiosity about the subject matter taught by the teacher so that some students don't understand the content, the lesson material.

This problem requires a solution so that it does not continue. Students' low critical thinking abilities will also result in low learning outcomes. So in learning, especially history lessons, a learning model is needed that can improve students' critical thinking abilities. The lecture method in history lessons is considered boring and monotonous, a learning model is needed that can stimulate students to be active and able to think critically so that at the end of the learning process they will get the expected learning results.

One way for students to have good critical thinking skills is by using the Problem Based Learning model. The teaching and learning process using the Problem Based Learning model will make students have critical thinking skills, because Problem Based Learning causes the thinking and learning process to occur.

The Problem Based Learning (PBL) model is one solution to the many problems that arise above. Because the Problem Based Learning (PBL) model can

trigger students to develop their insight and provide thoughts and ideas according to the results of their thinking so that students can also master the material they are studying. Sutirman (2013) emphasized that the Problem Based Learning (PBL) model can provide opportunities for students to express ideas, provide experiences related to the ideas that students already have. The Problem Based Learning (PBL) model encourages students to think critically, creatively, imaginatively, reflect and introduce ideas at the right time, try new ideas, and encourage students to gain self-confidence. In the learning process, the Problem Based Learning (PBL) model is one model that can be used to improve the learning system.

METHODS

This research uses a quantitative approach with a quasi-experimental method. The type of research used is experimental research using two classes as samples which are then given different treatments. The experimental class uses a problem based learning model and the control class uses a discovery learning model. The population in this study were students in class XI of the social sciences (IIS) program at SMA Negeri 7 Tangerang Regency who were divided into five classes.

This research uses a sampling technique in the form of non-probability

sampling which does not provide an equal opportunity for each population to become a sample (Sugiyono, 2014). The samples taken in this study considered classes that were quite homogeneous in terms of knowledge level and suggestions from class XI History subject teachers, namely class XI IIS 4 as the experimental class and class.

The data collection technique in this research is using tests as a research instrument. Data was obtained from the results by providing critical thinking ability indicator tests. The first stage, namely the pretest, was given to the control and experimental classes to determine the students' initial abilities. This test was given before treatment was given to the two samples. After the pretest was carried out, both samples were given treatment, then at the end a posttest was carried out to determine the students' final abilities after being given treatment and to test the hypothesis using the t-test statistical formula. Hypothesis testing uses a 2-party test to find out whether there is an influence or not in the Problem Based Learning learning model on students' critical thinking abilities.

The requirements for carrying out a data t-test are first to carry out a normality test and a homogeneity test. The normality test is carried out on a series of data to determine whether the data population is normally distributed or not using the Chi Square test equation.

The homogeneity test is a test of the variance of an existing group whether it has a homogeneous variance or not using a test f .

RESULTS AND DISCUSSION

Based on the results of observations from the History Learning Implementation Plan (RPP) from the History subject teacher and the results of interviews conducted on September 30 2023, the History Specialization learning process is usually carried out using the discovery learning (DL) model. This learning model emphasizes independent discovery of information obtained from students' understanding of ideas from the material being studied with the teacher as a facilitator during the ongoing learning.

This research uses KD 3.6 material, namely "Analyzing the influence of World War I and World War II on global political life (LBB and UN)". These basic competencies were chosen because of the suitability of the material with critical thinking indicators that will be tested and the material is broad with various topics so that students can analyze a problem either independently or in groups.

Before implementing the PBL learning model in the experimental class and the DL model in the control class, both classes were given a pretest with the same questions, in the form of a description of 7 questions. The pretest was carried out on March 13 2023. After

the pretest session, the data was analyzed using both descriptive and inferential statistics. The experimental class obtained an average of 37.45, while the control class obtained an average of 35.82. After that, prerequisite tests were carried out including normality tests for the experimental and control groups, followed by homogeneity. In the normality test, the experimental group obtained a score of 10.33 and the control class 9.23. value is 11.070 with $\alpha = 0.05$. Based on the formula that data is normally distributed if $<$, then both experimental and control classes have a normally distributed data distribution. The homogeneity test shows a value of (1.804) $\alpha = 0.05$, so the data from both groups have homogeneous variants. After testing the prerequisites for normality and homogeneity, it is continued with parametric statistical tests with the initial assumption that the data is normal and homogeneous. The data was analyzed using the t test with the pooled variance formula, the results were obtained $t_{\text{amoun}} (0.508) < t_{\text{table}} (1.997)$ with $\alpha = 0.05$ and degrees of freedom (dk) $n_1 + n_2 - 2 = 33 + 33 - 2 = 64$. From the t test, H_0 is accepted and means that the experimental class has the same critical thinking abilities as the control class.

After the pretest session, on March 17 2023, the first material was given regarding Basic Competency 3.6 "Analyzing the influence of World War I and World War II on global political life (LBB and

UN)". Learning with the PBL model begins with showing a video as an apperception related to World War material as an introduction so that students get an idea of the material they will study. The video is about World War I: the greatest tragedy in history. After being given a learning video, students are formed into groups and given LKPD containing problems related to the material being studied. LKPD presents problems in the form of leading questions that can hone students' critical thinking skills, after which each group discusses problem solving. In line with the opinion of Rosita and Bahriah (2016: 7), giving problems in LKPD is carried out to train students to think critically and have a high attitude of curiosity.

During the learning process, students also carry out various activities and help each other among their group members to solve problems presented by the teacher. With learning like this, it becomes easier for students to understand when they have difficulty with material or problems they don't understand. Moreover, each member in the group is a peer, which means students do not feel awkward asking questions between friends who understand better when there is something they don't understand. So that students' learning activities can be carried out well.

After completing problem solving, the next stage is to present the final

report. Each group that has been formed takes turns presenting the results of the discussion in front of the class. Other students can listen and note down points from the group discussion that is appearing in front of the class. After that, a question and answer session was held for the group that was performing if there was anything they wanted to ask and it was not clear about the material being presented

With the problem-based learning model, during group learning activities, each member is responsible for success in learning. Thus, each member becomes active and participates in taking part in the activities carried out in order to realize good cooperation as a result of the group members' responsibilities for the success of their group. This learning can improve students' critical thinking skills (Silberman, 2013).

After holding 3 meetings with two classes, namely experimental and control, the next step was a posttest to measure knowledge again after receiving treatment. The experimental class obtained an average of 72.62, while the control class obtained an average of 63.85. After that, prerequisite tests were carried out including normality tests for the experimental and control groups, followed by homogeneity. In the normality test, the experimental group obtained 7.29 and the control class obtained 2.49. The value is 11.070 with $\alpha = 0.05$. Based on

the formula that data is normally distributed if $F < F_{table}$, then both experimental and control classes have a normally distributed data distribution. The homogeneity test shows a value of $(1.007) < (1.804)$ with $\alpha = 0.05$, so the data from both groups have homogeneous variants. After testing the prerequisites for normality and homogeneity, it is continued with parametric statistical tests with the initial assumption that the data is normal and homogeneous. The data was analyzed using the t test with the pooled variance formula, resulting in a value of 2.672.

Next, a hypothesis test is carried out after the t test is known. Hypothesis testing is carried out using a two-tailed t test. The two-tailed t test showed that $(2.672) > (1.997)$, meaning that the null hypothesis was rejected and the alternative hypothesis was accepted. The statement from the two-party t test concluded that the PBL learning model had a positive influence on students' critical thinking abilities.

Based on posttest data on the percentage of critical thinking abilities, the experimental class was superior in 6 indicators out of the 7 indicators tested in critical thinking abilities. These 5 indicators include answering relevant questions/problems 74%, answering questions/problems contextually 66%, considering source credibility 75%, showing understanding of the problem

83%, defining terms 61%, providing solutions 68%. Meanwhile, the indicator for drawing conclusions was 78%, lower than the control class which applied the DL model at 84%.

The high percentage providing simple explanations, 74%, means that students can provide simple explanations. When implementing learning using the PBL model, each group member is given an individual assignment followed by discussion. The results of the discussion are combined so that students can provide simple explanations and focus on a question.

The high percentage of building basic skills of 75% means that students can understand and have the ability to give reasons. In implementing learning using the PBL learning model, when presenting information in outline, the researcher as a teacher provides a brief explanation of the material being taught, after that students transform these ideas into the topic being discussed, so that students can understand how to give reasons/arguments on the question.

The high percentage providing further explanation, 83%, means that students can understand to define a term and consider it from an event. In implementing the PBL model with Basic Competency (KD) 3.6, there are several examples of words which have historical meaning and significance. Examples of these words can be found in book sources

and analyzed by students in problem solving activities so that in the discussion process these meanings can be found.

The high percentage of managing strategy and tactics is 68%. In implementing the PBL learning model, the high percentage occurs because in the process of preparing the final report students prepare presentation formats in various forms such as narratives, tables, pictures so that students have the ability to organize strategies and tactics.

The low percentage of ability to conclude in the critical thinking indicator can mean that students are not yet able to think to draw conclusions based on facts about an event. Because in its implementation, even though it is in a group system, students also receive individual assignments with topics that vary from one another. Students only understand and focus on the part they have worked on, but not the entire topic in general.

Selecting criteria for considering possible solutions is the purpose of this decision-deciding indicator. According to Fischer (2014: 153), there are several things that need to be considered in decision making so that the decision taken is the right decision, namely: consider a series of possible alternative actions, consider the possible consequences of the various alternatives, consider how unlikely it is and how valuable the consequences are. which is possible, consider the

appropriate commitment and finally consider which alternative is best from the point of view of consequences. Based on the answers, students in the experimental class are more able to decide on a course of action because students are used to learning independently according to the stages of the PBL model used during learning. Indicators of critical thinking skills emerge when students discuss with each other to solve problems and answer questions. Apart from that, the implementation of the PBL model in learning activities can be seen based on observation data which shows that the PBL model has been implemented according to the stages of the learning model.

The above is in line with the theory of constructivist learning principles which emphasizes several things. The first is about social learning, namely social learning between students and teachers so that learning results as feedback can be useful not only for themselves, but also for other students. Second is cognitive apprenticeship, which is a process when an individual gradually acquires skills through interaction with experienced people (Slavin, 2019:5)

According to Rosita and Bahriah (2016:7), critical thinking skills can be improved with the PBL learning model. The PBL learning model invites students to be able to train students' abilities in solving problems so that they can improve

students' critical thinking abilities. Research conducted by Rosita and Bahriah also proves that the PBL learning model is more effective than delivering lessons using lecture or question and answer methods. The results of this research indicate that there is an influence of the PBL learning model on students' critical thinking abilities in history learning.

CONCLUSION

Based on analysis of research data and discussion of research that has been conducted in class. This is based on testing with a two-party t test using the pooled variant formula, proving that there is rejection of the null hypothesis area (h_0), and acceptance of the alternative hypothesis area (h_a), with an t_{amount} of (2.672) > than $t_{amount}(1.997)$. The influence of the PBL model on students' critical thinking abilities is based on learning steps that involve students actively in solving the problems they face. Students are not only required to achieve predetermined learning goals, students are also required to work together in a group to gather information, solve problems, and be accountable for the results of discussions so as to train students' critical thinking skills. $h_0 h_a t_{hitung} t_{tabel}$.

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