The Effectiveness of Contextual Problem Based Learning Model and Personality Types on Students History Learning Outcomes

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A R T I C L E   I N F O

A B S T R A K

Hasil belajar merupakan salah satu faktor penting yang digunakan untuk mengukur keberhasilan seseorang dalam belajar. Penelitian ini bertujuan untuk menganalisis keefektifan model pembelajaran sejarah berbasis masalah kontekstual dan tipe kepribadian terhadap hasil belajar sejarah siswa antara kelompok siswa yang menggunakan model pembelajaran sejarah berbasis masalah kontekstual dan kelompok siswa yang menggunakan model pembelajaran konvensional yang melibatkan tipe kepribadian pada kelas XI IPS pada SMA. Metode yang digunakan dalam penelitian ini adalah kuasi eksperimen kuantitatif dengan model desain perlakuan 2x2. Populasi dalam penelitian ini adalah seluruh siswa kelas XI IPS yang terdiri dari empat kelas yang berjumlah 124 siswa. Sampel penelitian ditentukan dengan teknik purposive random sampling. Pengumpulan data dilakukan dengan menggunakan metode tes untuk mengukur hasil belajar siswa dan angket digunakan untuk mengukur tipe kepribadian siswa. Hasil penelitian menunjukkan bahwa hasil belajar siswa yang menggunakan model pembelajaran berbasis masalah kontekstual lebih tinggi dibandingkan siswa yang menggunakan model pembelajaran konvensional. Terdapat pengaruh interaksi antara model pembelajaran kontekstual berbasis masalah dan tipe kepribadian terhadap hasil belajar sejarah. Hasil belajar siswa tipe kepribadian ekstrovert yang menggunakan model pembelajaran berbasis masalah kontekstual lebih tinggi dibandingkan siswa yang menggunakan model pembelajaran konvensional. Hasil belajar siswa tipe kepribadian introvert yang menggunakan model pembelajaran berbasis masalah kontekstual lebih rendah dibandingkan siswa yang menggunakan model pembelajaran konvensional

A B S T R A C T

Learning outcomes are one of the important factors that used to measure persons success in learning. This study aims to analyze the effectiveness of contextual problem-based history learning models and personality types on student history learning outcomes between groups of students using contextual problem-based learning models and groups of students using conventional learning models involving personality types in XI IPS class at senior high school. The method used in this study was a quasi-experimental quantitative with a 2x2 treatment design model. The population in this study was all students of XI IPS class consisting of four class, totaling 124 students. The research sample was determined by purposive random sampling technique. The data were collected using the test method to measure student learning outcomes and the questionnaire was used to measure the student's personality type. The results showed that the learning outcomes of students who use contextual problem-based learning models are higher than students who use conventional learning models. There is an interaction effect between contextual problem-based learning models and personality types on history learning outcomes. The learning outcomes of students with extrovert personality types who use contextual problem-based learning models are higher than students who use conventional learning models. The learning outcomes of students with introverted personality types who use contextual problem-based learning models are lower than students who use conventional learning models.

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1. INTRODUCTION

Education is one of the essential elements in human life, because it creates quality human resources to enhance the quality of life. Education is the main form of long-term investment for humans and their lives (Halili, 2019; Khaidir & Suud, 2020). Only nations realizing and understanding the strategic meaning of education can achieve development goals and dominate the world. Therefore, education must be continuously updated so that the Indonesian education can produce superior, innovative, creative, and independent human resources as well as adaptive to the current development (Estriyanto et al., 2017; Suhariadi et al., 2023). To achieve educational goals, learning is needed. Learning is the activity that involves the roles of teachers and students. According to previous study learning is a system that aims to help student learning, which contains a series of well-designed and well-arranged processes to naturally influence and support the internal student learning process (Ivanovic et al., 2018). Meanwhile, stated that the essence of learning is a process, which is the process of regulating, organizing the environment around students so that be able to encourage them to carry out the learning process. Learning activities will achieve effective goals if the teacher can use a learning model that suits the characteristics of the subject matter (Nieto-Escamez & Roldán-Tapia, 2021; Samerkhanova & Imzharova, 2018).

Learning outcomes plays an important role in the learning process as they are often used to measure a person's success in learning. History as a subject which contains knowledge and values about human life in the past requires the creativity of a teacher in order to eliminate the negative stigma that history is a boring subject (Murtonen et al., 2017; Yuliana et al., 2022). Moreover, a history teachers have to realize the goals of education and learning effectively and ideally. Because actually the success of the teaching and learning process is determined by using the right learning model, which is the way the teacher delivers the material to be taught (Senk & Thompson, 2020; Sumyadi et al., 2020). The use of the right model in learning would stimulate the students to learn well so that the students' learning outcomes could highly increase. The goal of learning history is achieved when learning history can provide meaning for students. Therefore, it is time for a contextual approach to be sought in learning history. This is important so that students can understand themselves and their environment so that they can act as agents of chance and problem solvers to overcome various life problems they experience (Adzobu, N, 2014; Vieira et al., 2019).

Problem-based learning is a student-centered learning model. According to problem-based learning is an active learning method based on the use of unstructured problems as a stimulus for learning. Furthermore, Barrows and Tamblyn in defined problem-based learning as a learning that is produced from the working process in understanding or providing solutions to a problem (Halim et al., 2017; Putri et al., 2019). In advance to this, previous study argued that problem-based learning is a constructive approach to learning based on problem-solving experiences (Hasibuan et al., 2019; Perdana et al., 2023). Research on the effectiveness of problem-based learning conducted by proved that problem-based learning is effective in improving the students' learning outcomes (Gumilang et al., 2019). In addition, research revealed that problem-based learning models could help the students to solve problems and help them to improve their thinking creativity (Hwang et al., 2022). Thus, problem-based learning is believed to improve the students' learning outcomes.

As a learning model that can activate the students, the effectiveness of problem-based learning is strongly influenced by various other factors like the students' characteristic. Quoted from the research of, one of the students' characteristic factors that also affect the effectiveness of problem-based learning is personality type. Personality type refers to the psychological classification of individual types where someone's preference exists in conducting or determining everything in his life (Putri et al., 2019; Syaiful et al., 2021). Thus, it could be concluded that the application of problem-based learning is strongly influenced by non-cognitive factors, namely personality type. Based on information obtained from the history teacher that students historical learning outcomes were still low at SMA Pusaka 1 Jakarta. It was shown by predominantly students learning outcome results on odd mid-semester either. The results represented its scores which below Minimum Learning Mastery Standard (KKM). Furthermore, students still considered the History subject was insignificant to the teaching activities. They also deemed that the history subject was merely obligatory memorization lesson (Alawajee & Delafield-Butt, 2021; Tauresia et al., 2020). Therefore, there was no any genuine concerned from them to study this subject. The students stated that they could get any subject material from books or internet according to the several students' interview research. These students' view could make numerous stigmas of history subject, which it was only considered cognitive aspect. Moreover, the history subject covers so much human life wisdom in the past, which could be a heed for recent or future timeline. Based on that information, the writer thought teachers have to create an effective teaching activity. The novelty of this study is activate reciprocate communication between teacher and students by using Contextual Problem-Based Learning (PBL). Hence, the writer would like to know its learning outcome by testing the effect between Contextual Problem-Based History Learning on students learning outcomes in History subject.

2. METHOD

This research is classified into quantitative research of experimental quasi. It is considered experimental quasi because of its strictly uncontrolled entire variable (Gopalan et al., 2020). The research design used treatment by level 2x2. This research was undertaken at XI IPS class of SMA Pusaka 1 Jakarta on odd 2022/2023 semester which was lasted for six times meeting.

Table 1. Experimental Research Design Treatment By Level 2x2

Personality Types (B)	Learning Models (A)	
	C-PBM (A_1)	Conventional (A_2)
Extrovert (B_1)	A_1B_1	A_2B_1
Introvert (B_2)	A_1B_2	A_2B_2

The population of this research was students of XI class SMA Pusaka 1 Jakarta which amounts 124 students. The writer was using the Slovin formula to determine the number of samples taken randomly with the result of 55 samples. By taking the sample randomly, the writer has the aim to specify one class as an experiment class where it is able to enforce learning activities using contextual problem-based learning model and another class acting as control class using conventional learning model. By using the sampling technique, the writer obtained the XI IPS$_1$ as the experiment class while the XI IPS$_2$ as control class. As for the next step, students' learning data result was collected using instrument test and personality type questioner. The data analysis precondition test used in the research was homogeneity test utilizing variant test (F). While the first hypothesis test was using Maan Whitney test, the second hypothesis was analyzed using 2 ways variant analysis customized to the model of treatment design by level 2x2. The third and fourth hypothesis used Kruskall Wallis test to discover the difference between two classes.

3. RESULT AND DISCUSSION

Result

Based on the research result, the writer obtained data of students' learning outcome using homogeneity test in class control and experiment class. The homogeneity test has the aim to gather more information proven that the two classes are homogeny. The result is show in Table 2.

Table 2. Homogeneity Test for Experimental Class and Control Clas

Source of Data	Variants	F	F Table with 5% Significance Level	Information
Experimental	18.98	1.42	1.63	Homogeneous
Control	15.95			

Based on Table 2, the examination of variant test F, results acquired are as follows; the value of F on count is as much as 1.42 < 1.63 value of F on the table with 0.05 point on significant level. Therefore, it could be concluded that both classes are homogeny. In other words, two of the classes have the same ability to understand learning materials related to the world's revolutions and its influence to this day. Moreover, on this research, the writer conducted hypothesis test to get a better understanding about the difference between experiment class that utilizes contextual problem-based learning model (A_1) with control class that currently uses conventional learning model (A_2) together with the other two type of personalities; extrovert (B_1) and introvert (B_2).

Based on Maan Whitney test result, average result acquired in experiment class is as much as 37,07 while in control class, the result obtained is 21,50. Thus, it is known that the average score in the experimental class is higher than the control class. While the Asymp value is also known. Sig. (2-tailed) to test the difference between the two classes is 0.000 <0.05, then H$_0$ is rejected and H$_1$ is accepted. This means that there is a difference between students who learn using contextual problem-based learning models and students who learn using conventional learning models. In other words, student learning outcomes using contextual problem-based learning models are higher than student learning outcomes using conventional learning models. The result of Anava test is show in Table 3.

The second hypothesis uses the 2-way Anava test. Based on Table 3 show the results of testing the SPSS data for 2-way ANAVA, the F value for group A (learning model) is 1.115 with a sig value of 0.043 <0.05, there is a significant difference between contextual problem-based learning models and conventional learning models (A_1 and A_2). The calculated F value for group B (personality type) is 0.115 with a sig value of 0.021 <0.05, has a significant difference between the extrovert personality type and the introvert

personality type). The calculated F value for the interaction of the learning model and personality type (AxB) is 40.023 with a sig value of 0.000 <0.05, has an interaction between problem-based learning models and personality types. It shows that there are differences and interactions between learning models and personality types. To find out which group was significantly superior, it was tested again using the Tukey test as show in Table 4.

Table 3. ANAVA Two Way

Sources of Variants (between)	sum of the squares	df	F	Sig
A	115.000	1	1.705	0.043
B	8.414	1	0.115	0.021
AxB	2877.803	1	40.023	0.000
Inter	201777.862	1	2980.188	0.000
Total (R)	0286			

Table 4. Tukey's Test

(I) Interaction	(J) Interaction	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A_1B_1	A_1B_2	10.21*	2.169	0.000	4.65	15.97
	A_2B_1	7.65*	2.169	0.002	2.19	13.50
	A_2B_2	-1.87	2.131	0.817	-7.42	3.69
A_1B_2	A_1B_1	-10.31*	2.169	0.000	-15.97	-4.65
	A_2B_1	-2.46	2.206	,680	-8.22	3.29
	A_2B_2	-12.18*	2.169	0.000	-17.83	-6.52
A_2B_1	A_1B_1	-7.85*	2.169	0.002	-13.50	-2.19
	A_1B_2	2.46	2.206	0.680	-3.29	8.22
	A_2B_2	-9.71*	2.169	0.000	-15.37	-4.06
A_2B_2	A_1B_1	1.87	2.131	0.817	-3.69	7.42
	A_1B_2	12.18*	2.169	0.000	6,52	17.83
	A_2B_1	9.71*	2.169	0.000	4,06	15.37

*. The mean difference is significant at the 0.05 level.

Table 4 shows that the highest average interaction value is the interaction value between A_1B_1–A_1B_2 which is equal to 10.21. It shows that the highest to the lowest interaction value for student learning outcomes is found in: First, contextual problem-based learning model class with extrovert personality type (A_1B_1), the second class the contextual problem-based learning model with the introverted personality type (A_1B_2), the third class of the learning model the conventional type is the extrovert personality type (A_2B_1), and the four classes of the conventional learning model are the introvert personality type (A_2B_2). Thus, the highest interaction is in the experimental class which uses a contextual problem-based learning model, which there are students with extrovert and introvert personality types (A_1B_1, A_1B_2), then H_0 is rejected and H_2 is accepted. In other words, there is an influence of the interaction between Contextual Problem-Based Learning models and personality types on student history of learning outcomes. The third hypothesis uses the Kruskall Wallis test. Based on the result of the Kruskal-Wallis Test, the average value of the experimental class is 40.45 higher than the average value of the control class, which 22.50. Additionally, Asymp Sig. 000<0.05, there is a difference so that H_0 is rejected and H_3 is accepted. Thus, it is evident that there are differences in student learning outcomes with extrovert personality types who use problem-based learning models with students with extrovert personality types who use conventional learning models. The fourth hypothesis used the Kruskall Wallis test also because researcher wanted to know class differences. The results of the Kruskal-Wallis Test show the average score of the experimental class using the contextual problem-based Learning model is 39.88 higher than the mean score of students in the control class, which 22.83. Additionally, the Asymp Sig. 000 <0.05, there is a difference so that H_0 is rejected and H_4 is accepted. Thus, it is evident that there are differences in student learning outcomes with introvert personality types who use contextual problem-based learning models with introverted personality types using conventional learning models.

Discussion

Based on the results of testing the first hypothesis, it shows that there are differences between students who use problem-based learning models and students who use conventional learning models. This means that student learning outcomes using problem-based learning models are higher than student

learning outcomes using conventional learning models (Al Mamun et al., 2022; Silalahi et al., 2021). The results of this study are in accordance with the research of which reveals that the use of problem-based learning and conventional models affects economic learning outcomes (Saputri et al., 2021). According to her, there is a significant difference between the scores of the experimental class and the control class so that the student learning outcomes in the experimental class are better than the control class. The problem-based learning model has a significant effect on improving economic learning outcomes in MAN 1 Pati. Another relevant research is a research which conducted said that problem-based learning as a power to improve student learning outcomes in Mathematics, and the results showed that the development of student learning outcomes is significant after using problem-based learning models in class XI MIA3 SMA Negeri 2 Namlea (Tambunan, 2019). Based on inferential statistical calculations (Paired Sample T-test), a significant value of 000 <0.05 was obtained so that H_0 was rejected and H_a was accepted.

The results of Maan Withney Test showed that the learning process using contextual problem-based learning models affects student learning outcomes. It means that when students learn by using contextual problem-based learning models, their learning outcomes will be different or even higher than students who take conventional learning models. Thus, the first hypothesis which stated that students learning outcomes with contextual problem-based learning models are higher than student learning outcomes with conventional learning models is proven.

The second hypothesis shows that there is an effect of the interaction between the learning model and the personality type towards history learning outcomes. It means that the second hypothesis which stated that there is an impact of the interaction between learning models and personality types towards historical learning outcomes is proven. This is based on the significant difference in student learning outcomes with extrovert and introvert personality types in the experimental class and the control class. In accordance with the research conducted found learning models and student personality types on learning outcomes, it showed that problem-based learning model interacted with personality type were significantly impacted 4th year students' learning outcome of SD Negeri 30 Kota Selatan, Gorontalo with a determining value of 25.90% (Rohman et al., 2021). Thus, the second hypothesis, namely the interaction impact between learning models and personality types toward history learning outcomes were proved significant.

Based on the third hypothesis test using the Kruskall-Wallis test, it was known that the learning outcomes of extroverted students used contextual problem-based learning models were higher than those who used conventional learning models. The difference was clearly seen that the extroverted students' average score of the experimental class using contextual problem-based learning model was higher than those in the control class using conventional learning models. It meant that the learning outcomes of extroverted students who used contextual problem-based learning model which were higher than the learning outcomes of those who used conventional learning model in XI IPS of SMA Pusaka 1 Jakarta were turned out to be accepted. It was in line with the results of which found that problem-based learning strategies were acceptable in improving students' economic learning outcomes, while extroverted students would gain better result than the introverted (Mukhtar & Putri, 2021).

Problem-based learning models and personality types were effective in improving students' learning outcomes. During the learning process of contextual problem-based learning model, the extroverted students would be very active in the learning process by formulating problems, looking for solutions from various sources, and collaborating with other friends to discuss and solve the problems (Palupi & Septiana, 2018). Meanwhile, introverted students would be very careful in reading, listening, and drawing radical and harsh conclusions. Personality types had a huge impact on students learning process and also the feedback given by the teachers and classmates. Therefore, it would greatly influence the students' learning outcome. Thus, when a contextual problem-based learning model applied, extroverted students would be more active in their role than extroverted students who learn with conventional models (Malmia, 2019; Rohim & Yulianti, 2020).

The fourth hypothesis test, using the Kruskall-Wallis test, showed the significant difference between introverted students learning outcomes using contextual problem-based learning and those who used conventional learning models. Thus, the learning outcomes of introverted students who used problem-based learning models were higher than those who used conventional models. Therefore, the fourth hypothesis was proved. It meant that there was a positive correlation between contextual problem-based learning models and personality types toward history learning outcomes. The learning models used in the learning process had to be able to actively involve the students (student-centered). Therefore, they could expressed all their skills, especially in learning history (Davis et al., 2018; Raharjo et al., 2019).

In spite of the introverted students, they would give well respond when they were given the right learning models which could generate their inspiration and feedback. Conversely, when introverted students were given a learning model which could not generate their response, the learning atmosphere seemed to be passive. Therefore, the students only accepted the teacher's material without any interaction

and collaboration. Thus, it affected the acquisition of poor learning outcomes. This situation occurred in the places where the researcher conducted the research, namely in the experimental classroom, which used problem-based learning models which could generate introverted student feedback and responses. Meanwhile, in the control classroom, which used conventional learning models, there was only one-sided feedback. Therefore, introverted students in the experimental class tended to be more active than introverted students in the control class who used conventional learning models.

4. CONCLUSION

Based on the result of this research, teachers are suggested to increase the students' learning outcomes by using contextual problem-based learning. The teacher should master the actual learning resources and also the latest phenomenon or problems which will be discussed using contextual problem-based learning to give a suitable conclusion and recommendation. This research could be generalized in the next research by proving the recommendations for problem-based learning model with the extrovert personality type that could influence and improve students' learning outcomes maximally. The future research could use problem-based learning which is modified with other variables such as sex, age, the level of experiences, and cultural orientation to obtain a good result of students' learning outcomes.

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