

The Influence of the Project Based Learning Model on Student Learning Outcomes in History Subject of Class X E At SMA Negeri 1 Sigi

Hijratul, Hasan, Idrus A Rore, Ismail

History Education Study Program, Faculty of Teacher Training and Education, Tadulako University, Palu, Indonesia

ABSTRACT

This research was motivated by the decline in students' learning outcomes in class X E, as evidenced by the average score of 31.88 in the odd semester examination of the 2024/2025 academic year for the History subject, as well as the use of conventional teaching methods which are considered boring. The aim of this study was to determine the influence of the Project Based Learning model on students' learning outcomes in class X E. The method used in this research was a Quasi-experimental design with a non-equivalent control group, involving an experimental class (X E) and a control class (X F) with purposive sampling techniques, and the research sample consisted of 29 students. The results of the Mann Whitney U analysis showed an Asymp. Sig. (2-tailed) value of $0.017 < 0.05$, thus the alternative hypothesis (H_1) was accepted and the null hypothesis (H_0) was rejected. Therefore, there is a significant influence of the Project Based Learning model on students' learning outcomes in the History subject in class X E At SMA Negeri 1 Sigi.

Keywords: *Project Based Learning, Learning Outcomes, Learning*

Corresponding author

Name: *Hijratul*

Email: *alhairahki311@gmail.com*

INTRODUCTION

The 21st-Century Learning Era and the Problem has brought about significant changes resulting from the rapid advances in science and technology (IPTEK). According to Mubin (2024), this shift includes a change in the learning paradigm, marked by curriculum modification, the use of new media, and the integration of technology. The researcher argues that good and effective learning should be able to improve students' learning outcomes. In the current era, the focus shouldn't just be on memorizing, but also on understanding the material taught by the teacher. The researcher suggests developing learning methods and models, especially for History subjects, to enhance learning outcomes and overcome student boredom. History Learning and Learning Outcomes. History learning is a process that involves past events. The subject aims to foster critical, creative, imaginative, and reflective thinking in students, as well as enable them to understand human behavior and societal values (Oktafiani, 2021). Additionally, history provides an

understanding of concepts and subject matter. Every learning process generates an output, or learning outcome.

Learning outcomes are defined as the level of student success in mastering school subjects, expressed as a score obtained from a test on a certain amount of material (Purwaningsih, 2022). When students achieve good learning outcomes, it helps them reach the Minimum Mastery Criteria (KKM) set by the school. Supardi (2015) in La rosmi (2023) adds that learning outcomes are a stage of actual achievement displayed as behavior, encompassing cognitive, affective, and psychomotor aspects, and can be seen in the form of habits, attitudes, and appreciation. One way to measure learning outcomes is through test (multiple choice or essay). According to Septiana (2016) in Ardillah et al. (2020), a test is a method for conducting assessment in the form of a series of tasks that students must complete to yield a score. Sudijono (2003) in Ardillah et al. (2020) states that tests have two functions: 1) As a measurement tool for students, assessing the competencies they acquire during the learning process. 2) As a measurement tool for the success of the teaching program.

The Problem at SMA Negeri 1 Sigi and proposed Solution the researcher believes that tests can measure students' ability during the learning process and determine whether they can achieve the KKM (Minimum Completeness Criteria). Achieving the KKM helps the school realize its vision and mission. However, the reality at SMA Negeri 1 Sigi in Sigi Regency is that students' learning outcomes are declining and far from the ideal condition. Based on the researcher's initial observation, comprehension of history material is still low. This is evidenced by the results of the odd semester exam for the 2024/2025 academic year in History for Class X Out of a total population of 230 Class X students, only 219 participated in the exam. Of those who participated, only 3 students were able to meet or exceed the KKM set by the school, which is 70. This fact indicates that the majority of students have not achieved the expected learning outcomes, partly due to the use of conventional methods and assignments. This highlights the need for an effective and relevant alternative learning model in the current era. The researcher proposes the Project-Based Learning (PBL) model as an approach capable of addressing this issue. According to Sisi Kurnia & Ahmad Zamhari (2024), PBL uses a project or activity as a medium where students conduct exploration, assessment, interpretation, and synthesis of information to produce various forms of learning outcomes. Hadijah (2023) defines Project based learning as a teaching system that gives students the opportunity to collaborate with peers on structured tasks, making students more active, working in groups, and using cooperative discovery. The researcher concludes that, through project-based learning, students will be more collaborative and will produce learning outcomes that meet the desired standards, especially in the History subject.

METHOD

This research uses a Quasi-Experimental design with a non-equivalent control group. Nonequivalent control group design, as explained by Sugiyono (2020), in which neither the experiment group nor the control group is chosen randomly (non-random)

conducted in 2025 from February to May, it focuses on the effect of the Project Based Learning model on history learning outcomes in class X E SMA Negeri 1 Sigi. The sample consists of 29 students, including class X E as the experimental class and class X F as the control. Both classes completed pretests and posttest, with the experimental class receiving Project Based Learning treatment and the control class conventional lecture methods. Pretest and posttest data were tested for normality, concluding non-normal distribution, thus hypothesis testing was conducted using the non-parametric Mann-Whitney U test, suitable for non-normal data. The hypotheses tested are:

- H1: The Project Based Learning model affects student learning outcomes
- H0: The Project Based Learning model does not affect student learning outcomes

FINDING AND DISCUSSION

RESEARCH RESULT

1. Result Analyze deskriptiv Pretest and Posttest Experimen Class and Control Class

Pretest results showed the experimental class had a higher average score (75.60) than the control class (52.76), indicating better initial ability. Posttest results indicated the experimental class had a higher average score (75.86) compared to control (61.38), showing better learning outcomes after treatment. Mann-Whitney U test results showed Asymp. Sig. (2-tailed) = 0.017 < 0.05, confirming a significant effect of the Project Based Learning model on student learning outcomes. Data normality and homogeneity tests validate using non-parametric tests.

Table 1.1 Analyze Pretest Experiment and Control Class

Statistic	Experimen Class	Control Class
Number of Student	25	29
Maximun	100	100
Minimun	40	10
Mean	75.60	52.76
Mec	80	50
Modus	80	40
Std deviasi	15.022	23.283

Based on the table, the average pretest score of the experimental class (75.60) is much higher than that of the control class (52.76). This indicates that, generally, the initial ability of students in the experimental class is better. The higher median and mode in the experimental class suggest that most students have high scores. The standard deviation of the control class (23.283) is greater than that of the experimental class (15.022), meaning the scores of students in the control class are more spread out or less uniform.

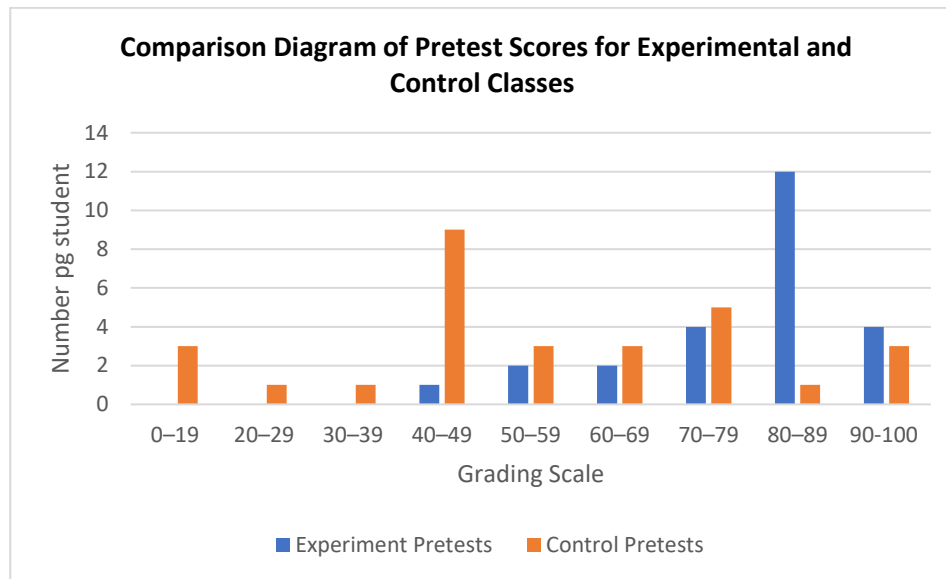


Diagram Pretest Scores for Experimental and Control Classes

In the diagram, within the range of 80–89, it is dominated by the experimental class with 12 students, while the control class has only 1 student. Furthermore, in the range of 40–49, the control class shows a lower diagram indicating that many students in the control class scored within the 40–49 range, which is considered low.

2. Give Treatment

After the Pretest, both the experiment class and the control class will be given a treatment/action. The Experiment Class will be given the Project-Based Learning (PBL) model treatment, and the Control Class will be given the conventional method or the lecture method. The Experiment Class, or Class X E, was given the Project-Based Learning (PBL) model treatment, which includes 6 stages. The first two stages are:

1) Establish the Fundamental Question

In establishing the fundamental question for the students, the researcher started with the following questions: a. What do you know about the Hindu-Buddhist kingdoms? b. How would you explain these kingdoms?

The Hindu-Buddhist kingdom material presented included the Majapahit Kingdom, the Kutai Kingdom, and so on.

2) Design the Project Plan

In this stage, students were divided into 5 groups and were given the opportunity to choose a project that was easy to create. As a result, they chose to create a digital poster using the Canva application. In this stage, students were also given the opportunity to design their poster drafts using the Canva website or by sketching them on paper.

3) Create a Schedule

In creating the schedule, the researcher and students worked together to divide the following timeline, Schedule start 5-8 May 2025.

4) Monitor

Monitoring was carried out both online and offline.

- Offline: The researcher checked on the poster creation progress over 4 days.
- Online: Monitoring was also conducted via the WhatsApp group to track how far the posters had been completed.

5) Test the Outcome

In this stage, the students presented the results of the posters they had created.

6) Evaluate the Experience

The experience evaluation stage involved students giving feedback and discussing their experiences while creating the posters.

Key student responses included:

1. Obstacles/Challenges: Two groups felt they lacked cohesion or teamwork. The difficulties included working on only one mobile phone and some group members not caring enough about the assignment.
2. Positive Feedback: Several students said that creating the poster was interesting and fun because their learning involved using a website (Canva), editing, and simultaneously reading information related to the subject matter. They also stated that they could be more active in learning.

The Control Class, or Class X F, was only given the lecture method treatment, which consisted of:

1. The researcher explained the same material about the development of the Hindu-Buddhist kingdoms in Indonesia.
2. The researcher then directed students to ask questions if they didn't understand the material.
3. Finally, the researcher concluded the lesson.

3. Analyze Posttest Experimen class and Control Class

Table 1.2 Posttest Experimen class and Control Class

Statistik	Kelas Eksperimen	Kelas kontrol
Number of students	25	29
Maximun	100	100
Minimun	40	10
Mean	75.60	52.76
Median	80	50
Mode	80	40
Deviation std	15.022	23.283

Based on the table, the average posttest score of the experimental class (75.86) is higher than that of the control class (61.38), indicating that the experimental class achieved better learning outcomes after the instruction. The maximum score of the experimental class is higher (100) compared to the control class (90), and the minimum score in the control class is much lower (10) than in the experimental class (30). The standard deviation of the control class is larger, indicating that the distribution of students' scores is more varied and uneven compared to the experimental class.

The following is the diagram of the posttest results of the experimental class.

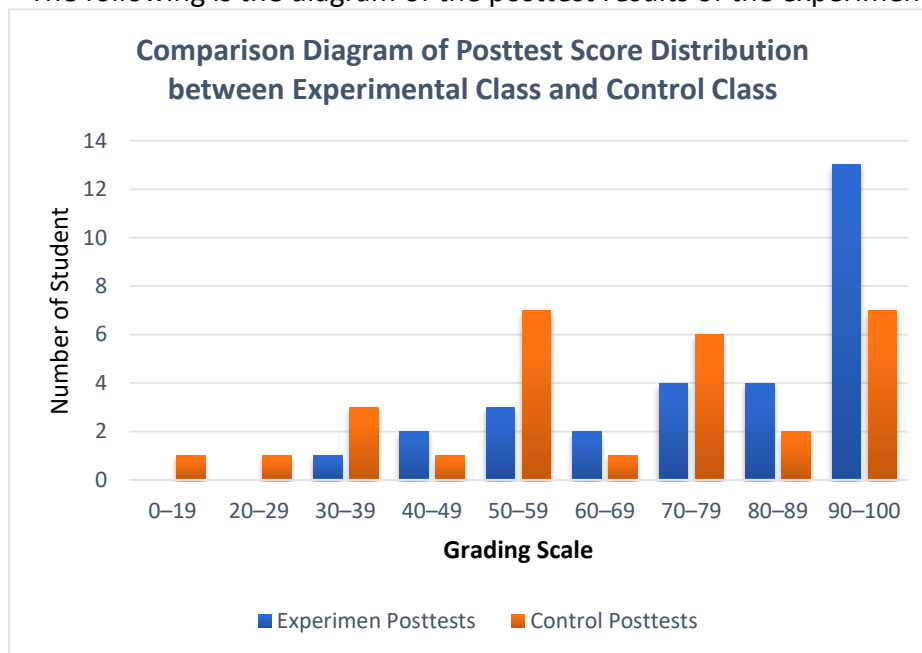


Diagram Posttest Scores for Experimental and Control Classes

Based on the table and diagram above, the difference in posttest results between the experimental class and the control class shows that the experimental class has a better score distribution, with more students achieving high scores (particularly in the range of 90–100). The control class tends to have more students in the low to medium score range (50–59). This indicates that the application of the Project Based Learning model in the experimental class had a positive impact on students' posttest results.

4. Normality Test, Homogeneity Test, and Mann-Whitney U Test

A. Normality Test

The normality test is used to determine whether the data are normally distributed or not. In testing both pretest and posttest data, if the data are normally distributed, the analysis can be continued using the Independent Sample T-Test. However, if the data are not normally distributed, the hypothesis testing is carried out

using the non-parametric Mann-Whitney U test, in accordance with the independent nature of the data.

Table 1.4 Normality Test of Data

		<i>Tests of Normality</i>					
Class		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
History Learning Outcomes	Experiment Pretests	.255	25	<.001	.894	25	.014
	Experiment Posttests	.209	29	.002	.901	29	.011
	Control Pretests	.156	29	.068	.946	29	.144
	Control Posttests	.160	29	.056	.916	29	.025

a. Lilliefors Significance Correction

Source: Data Analyzed using SPSS version 30

The following is a summary of the normality test results based on the Shapiro-Wilk data:

1. Pretest experimental class; P = 0.014
2. Posttest experimental class; P = 0.011
3. Pretest control class; P = 0.144
4. Posttest control class; P = 0.025

Based on these results, only the pretest data of the control class are normally distributed ($0.144 > 0.05$), while the other data show values < 0.05 , which means they are not normally distributed. Therefore, overall, the researcher concludes that the data in this study are not normally distributed. Thus, the hypothesis testing does not use the parametric Independent Sample T-Test but instead employs the non-parametric Mann-Whitney U test, which is appropriate for data that do not meet the normality assumption.

B. Homogeneity Test

A homogeneity test is a statistical method used to determine whether the variances of two or more groups of data are equal or not (Hidayat, 2021 in Nurhaswinda, 2025). In this study, Levene's Test was used. The following are the homogeneity test results using SPSS.

Tabel 1.4 Uji Homogenity
Test of Homogeneity of Variance

		Levene	df1	df2	Sig.
		Statistic			
History	Based on Mean	1.298	1	56	.259
Learning	Based on Median	1.082	1	56	.303
Outcomes	Based on Median and with adjusted df	1.082	1	53.782	.303
	Based on trimmed mean	1.355	1	56	.249

Source: Data Analyzed using SPSS version 30

The following are the test results showing that the significance values (Sig.) in the four methods are:

1. *Based on Mean*: 0,259
2. *Based on Median*: 0,303
3. *Based on Median and with adjusted df*: 0,303
4. *Based on Trimmed Mean*: 0,249

Based on these data, all significance values are greater than 0.05, so it can be concluded that the learning outcome data from both groups (control and experimental) have homogeneous variances.

C. Non-Parametric Mann-Whitney U Test

This test is a hypothesis test used when the data are not normally distributed and are suitable for independent data. The following are the results of the non-parametric Mann-Whitney U test.

Tabel 1.5 Mann-Whitney U Test

Test Statistics^a	
	History Learning Outcomes
Mann-Whitney U	269.500
Wilcoxon W	704.500
Z	-2.387
Asymp. Sig. (2-tailed)	.017

a. Grouping Variable: Class

Source: Results of SPSS Data Analysis, Non-Parametric Test

The results of the Mann-Whitney U test show that the Asymp. Sig. (2-tailed) significance value (p-value) is 0.017. Since this value is smaller than the significance level of 0.05 ($0.017 < 0.05$), H_0 is rejected and H_1 is accepted. This indicates that H_1 is accepted, meaning there is an effect of the Project Based Learning model on students' learning outcomes in the history subject of Class X E At SMA Negeri 1 Sigi.

DISCUSSION

The research results obtained indicate that there is a difference between the learning outcomes of the experiment class and the control class. The post-test results show that the experiment class achieved an average score of 75.86, while the control class achieved an average score of 61.38. Subsequently, a data normality test was conducted. The results showed that most of the data was not normally distributed, leading to the use of a non-parametric test. The homogeneity test yielded a value of $0.249 > 0.05$, which indicates that the variances are homogeneous. The analysis using the non-parametric Mann-Whitney U test produced a significance value of 0.017. Since this value is smaller than 0.05 ($0.017 < 0.05$), it signifies that there is an influence of the Project-Based Learning (PBL) model. It can therefore be concluded that the Project-Based Learning model is effective in improving student learning outcomes.

The Project-Based Learning model provides students with the opportunity to be actively involved in the learning process through projects relevant to the subject matter. This aligns with constructivist theory, constructivist theory, According to Iswahyudhi, 2023 in (Nabila, 2025) the relationship between constructivist theory and Project-Based Learning (PBL) is very close, as both share many of the same fundamental principles which emphasizes that students build their own knowledge through direct experience, collaboration, and problem-solving. Furthermore, according to Ndaru and Pinton (2021), Constructivism is an alternative approach model capable of addressing the shortcomings of behaviorism In this context, students in the experiment class did not just passively receive information; instead, they actively participated in designing, executing, and presenting their history learning projects.

This finding is consistent with the research by Sisi Kurnia (2024), who also studied the same subject (History) and found that the PjBL model had an influence on learning outcomes. This is further supported by the research of Setiawan (2021), which found that the Project-Based Learning model also improves students' cognitive and psychomotor aspects.

CONCLUSION

Based on the research results explained in the previous chapter, the hypothesis testing using the non-parametric Mann-Whitney U Test showed a significance value of $0.017 < 0.05$. This means that there is a statistically significant difference between the learning outcomes of students taught using the Project Based Learning (PjBL) model and those taught using the lecture method. Thus, the alternative hypothesis (H_1) is accepted and the null hypothesis (H_0) is rejected. Therefore, it can be concluded that the Project Based Learning model has an effect on students' learning outcomes in the history subject of Class X E At SMA Negeri 1 Sigi.

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