

The Effectiveness of the Learning Cycle 5E Learning Model in an Effort to Improve Learning Outcomes of History

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Abstract: Learning is a process of changing behavior and knowledge. The learning process becomes a system of learning. The results of observations made at SMA Negeri 34 Central Maluku Province of Maluku in history subjects revealed that cognitive learning outcomes in students were still low. One learning model that can train students in solving problems is done by applying the 5E Learning Cycle model. This study aims to analyze the effect of using the 5E Learning Cycle learning model on history learning outcomes at Central Maluku State Senior High School and to analyze the effectiveness of using the 5E Learning Cycle learning model in improving history learning outcomes at Central Maluku State Senior High School 34. This type of research is a pure experiment using a pretest-posttest group design. The samples in this study were students of class XI C as the experimental class and class XI B as the comparison class. The results of data analysis in this study concluded that: (1) the Learning Cycle 5E learning model had an effect on the results of learning history at SMA Negeri 34 Central Maluku; (2) the Learning Cycle 5E learning model is effective in improving history learning outcomes at SMA Negeri 34 Central Maluku.

Abstrak: Belajar adalah proses perubahan tingkah laku dan ilmu pengetahuan. Proses belajar menjadi satu sistem dalam pembelajaran. Hasil observasi yang telah dilakukan di SMA Negeri 34 Maluku Tengah Provinsi Maluku pada mata pelajaran sejarah diketahui bahwa hasil belajar kognitif pada siswa masih rendah. Salah satu model pembelajaran yang mampu melatih siswa dalam mengatasi masalah hal ini dilakukan dengan menerapkan model Learning Cycle 5E. Penelitian ini bertujuan untuk menganalisis pengaruh penggunaan model pembelajaran Learning Cycle 5E terhadap hasil belajar sejarah di SMA Negeri Maluku Tengah dan menganalisis keefektifan penggunaan model pembelajaran Learning Cycle 5E dalam meningkatkan hasil belajar sejarah di SMA Negeri 34 Maluku Tengah. Jenis penelitian ini adalah eksperimen murni dengan menggunakan pretest-posttest group design. Sampel dalam penelitian ini adalah siswa kelas XI C sebagai kelas eksperimen dan kelas XI B sebagai kelas pembandingan. Hasil analisis data dalam penelitian ini menyimpulkan bahwa: (1) model pembelajaran Learning Cycle 5E berpengaruh terhadap hasil belajar sejarah di SMA Negeri 34 Maluku Tengah; dan (2) model pembelajaran Learning Cycle 5E efektif dalam meningkatkan hasil belajar sejarah di SMA Negeri 34 Maluku Tengah.



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INTRODUCTION

Education is an important part that cannot be separated in today's life because the basis for the survival of a nation is education. Education is also the main center in equipping the younger generation to achieve their goals (Madhakomala et al., 2022). The progress of a nation can be seen from the quality of education of the nation itself. Rahmat Said that a country is said to be a developed country, one of which can be seen in terms of the quality of education (Rahmat, 2021). (Assadi et al., 2019) argues that developed countries such as Britain, the United States, Germany, Canada, Italy, France, and Japan are very concerned about the quality of their country's education. Education is used by developed countries as a force in the implementation of development. That is, through quality education, quality human resources can be created so that they can compete at the international level.

Education plays a very important role in improving quality human resources, and intelligent, peaceful, open, and democratic life. Therefore innovation in the field of education must always be carried out to improve the quality of education. High-quality education will be able to increase human dignity (Sukadari et al., 2021).

One of the efforts that can be made to improve the quality of education is through increasing the quality of learning activities in schools. Learning activities are the most important activities in the overall effort to improve the quality of education (Nugraheni & Yuenyong, 2007). This is because through good learning activities, educational goals will be achieved in the form of changes in student behavior (Khikmah, 2019). Learning is essentially a process, namely the process of organizing, organizing the environment around students so that it can grow and encourage students to carry out the learning process.

Classroom learning activities are at the heart of the implementation of education which is marked by classroom management activities, the effectiveness of the application of learning models, and learning resources. The way educators teach is the same, the difference is how educators express warmth to students in front of the class so that the effectiveness of learning can be seen from the

application of the learning model used (Purwanto, 2010). For this reason, teachers must have a quality and appropriate learning approach, so that it is hoped that the learning atmosphere in the classroom will be more conducive, effective, and fun.

History education is basically to develop a sense of time without people losing their temporal direction. Learning History is learning to appreciate the time and be grateful for events. Useful as a lesson in what happened and in living life and what will come (Lisnawati et al., 2022). Without knowing history, a society or a nation can't know who they are and how they became what they are today (Suyanti, 2019). Through the contribution of learning history can shape character and moral judgments can also be made at this time as a measure of evaluating the past so that it can be reflected in life. The statement above is relevant to what was said (Alfianti et al., 2019) that learning history plays a role in the formation of national character for the younger generation through formal education which is expected to form historical awareness which can morally foster student nationalism. (Sopacua et al., 2020) also states that learning history has a fundamental role in forming national identity and personality.

But the reality is that today's problems, history subjects are considered by some students to be unimportant because they are only dealing with the past. Even more ironically, history lessons are synonymous with memorizing the same events from the past until now, because in learning activities students listen more, memorize the material given by their teacher and repeat it during exams. Even some people think that history is a boring and uninteresting subject. It should be realized that this is happening not because historical material is worthless or no longer important to learn, but because elements in learning history are unable to adapt to today's conditions. That is, there needs to be innovation from related elements in learning history. One very influential element is the role of a teacher (Barkah & Taufik, 2021). (Rusijono et al., 2020) states that to realize this, an educator is needed, in this case, a teacher who is proportional and competent in his field. (Meliha Köse, 2017) The teacher has an important role in learning because as

educators it is hoped that they will move the elements in history learning so that it greatly influences the plus-minuses of student learning outcomes.

Student learning outcomes are an indicator of success in the learning process (Lubis et al., 2019). High learning outcomes are an illustration of students' ability to master the material that has been delivered by the teacher. Learning outcomes are also an indicator of the success of a teacher in carrying out learning (Pattiasina & Sopacua, 2022). Learning outcomes can be identified through an assessment in which the results of these measurements indicate the extent to which the teaching materials provided by the teacher can be mastered by students (Utari, 2018). Learning outcomes are something that is obtained, mastered, or owned by students after the learning process takes place. A student can be said to have achieved learning outcomes if certain changes have occurred in him through learning activities (Gunawan et al., 2018). An effective learning process will make learning outcomes more meaningful and meaningful.

Based on observations on August 3, 2022, at SMA 34 Central Maluku, Maluku Province, emphasized that there were various problems in learning history. This observation clearly shows that history learning is still teacher-centered. This can be seen from the participation of students during the learning process, the majority of which are still low. For example, when the teacher asked a question, only a few students dared to answer. Even when the teacher asked students to ask questions, no students dared to ask. The results of an interview with one of the history teachers also showed that the average teacher used a conventional model, namely lectures, so the model used in learning did not vary. Continuous learning without innovative learning models certainly makes history learning monotonous and ultimately has a boring effect on students, especially if history lessons are in the last hour. Bored students eventually fall asleep or choose to chat with their friends without paying attention to the material presented by the teacher. This is evidenced by the lack of active students during the learning process. The average semester exam results in history learning for SMA 34 Central Maluku students in

2021/2022 are still below the Minimum Completeness Criteria (KKM). From the percentage acquisition that does not meet the minimum completeness criteria (KKM), it can be concluded that the average value of learning outcomes in history subjects has not yet reached an optimal level of success. If this problem is left unchecked, it will harm the learning process.

Not yet optimal level of success of students in mastering a subject can be caused by several factors, one of which is the use of the learning model used by the teacher is not appropriate and does not facilitate the diversity of the material. Choosing the right learning model is a very important option in the continuity of learning activities because the teacher's accuracy in choosing a learning model will greatly affect the quality and success of the learning process. This statement was reinforced by Shoimin because choosing the right learning model can help students become active and able to work together in history learning activities (Shoimin, 2014). Therefore, the author intends to provide a solution by changing the learning situation by varying the learning model that can excite students' interest and attention, namely by using an innovative, creative, and effective learning model, which can improve student learning outcomes, including by applying the 5E Cycle Learning model.

The Learning Cycle 5E model is part of Piaget's constructivism-based learning theory (Djadir et al., 2021). Rejeki suggests that the Learning Cycle model is a learning model based on constructivism theory in which children build their knowledge by relating it to previous experiences they have had so that the learning process will be student-centered (Rejeki, 2016). The 5E Learning Cycle consists of 5 phases, namely Engagement, Exploration, Explanation, Elaboration, and Evaluation (Putra et al., 2018). The advantages of the learning cycle learning model include increasing student motivation because students are actively involved in the learning process, learning becomes more meaningful, and training students to find concepts through experimental activities (Kania, 2016). because based on the stages in the cyclical learning model, students not only listen to the teacher's explanation but are required to play an active

role in exploring and enriching their understanding of the concepts they are studying.

In each phase of this learning, it is possible to train and develop students' thinking skills. In the engagement phase, the teacher begins learning by arousing student interest, so that students feel interested and the learning process becomes more enjoyable. In this phase, students give their predictions about the concepts to be conveyed. In the exploration phase, the teacher facilitates students to answer the truth of their predictions through practical activities or studying literature in small groups. In the exploration phase, students are indirectly invited to learn by being directly involved in building their knowledge while training their thinking skills. Moreover, in the last three phases of the learning cycle learning model, students are directed to present their findings (explanation phase), apply the knowledge and skills they have acquired to new things (elaboration phase), then close with an assessment of the results of the student learning process and the implementation of the process. learning (evaluation phase).

Based on the background and explanation regarding the importance of the ability to use learning models in supporting learning activities, the authors are interested in conducting research to know the effectiveness of the 5E Learning Cycle learning model to improve History Learning Outcomes at SMA Negeri 34 Central Maluku.

This research is supported by various studies conducted by previous researchers. Among them is research conducted by (Mustofa, 2018) The Effect of 5e Learning Cycle Learning on Critical Thinking Ability and Learning Outcomes. Related research was also conducted by (Aslindawaty, 2017) with the title Application of the 5E Learning Cycle Learning Model (Engagement, Exploration, Explanation, Elaboration, Evaluation) to Improve Economic Learning Outcomes. Based on the research above, there is a relationship that is relevant to this research, because the research uses the 5E Learning Cycle model intending to know the effect of using the 5E Learning Cycle learning model on learning outcomes. However, what distinguishes and has a novelty value from previous research is that this research examines the effectiveness

of using learning models in improving history learning outcomes with the focus of this research being the subject of independent Indonesia in class XI.

METHODS

The method used in this study is a quantitative method with an experimental approach. The design used in this study is the pretest-posttest group design. The independent variable in this study is the Learning Cycle 5e (X) model. The dependent variable in this study is the result of learning history (Y).

This research was conducted at SMA 34 Central Maluku in class XI IPS semester 2. This research began in August-November 2022. The population in this study were all students of class XI SMA Negeri 34 Central Maluku, while the sample in this study was class XI C as the experimental class and XI B as a comparison class with 30 students each. The sampling of data in this study used a cluster sampling technique that had been determined by the researcher and made into several groups which would be divided into two groups. To obtain data on the results of studying history on the subject of Indonesia Merdeka, the appropriate data collection technique is to use a test. The test given to the research sample consisted of 35 multiple-choice questions.

The data analysis technique used in this study is a quantitative analysis technique. Prior to the data analysis stage, the data analysis requirements test was carried out, namely the normality test and homogeneity test. After the test conditions are met, the next step is to analyze the independent sample t-test mean difference test. The average similarity test is used to determine whether there are differences (similarities) in learning outcomes after being given good treatment in the experimental class and the comparison class. The average difference test formula used is as follows.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

(Sugiyono, 2015)

Notes:

\bar{X}_1 : Average score of the experimental group

\bar{X}_2 : Average score of the comparison group

The statistical hypotheses in this study are:

$H_0 : \mu_1 \leq \mu_2$: The average value of the learning outcomes of the experimental class students is less than or equal to the average value of the comparison class students' learning outcomes.

$H_a : \mu_1 > \mu_2$: The average value of the learning outcomes of the experimental class students is greater than the average value of the comparison class students' learning outcomes.

The criterion for testing the hypothesis is to accept H_0 if $t_{count} < t_{table}$ (there is no effect of using the Learning Cycle 5E learning model on the history learning outcomes of class XI students of SMA Negeri 34, and reject H_0 if $t_{count} \geq t_{table}$ (there is an effect of using the learning model on history learning outcomes in students) class X SMA 34 Central Maluku).

$$N - Gain = \frac{Score\ posttest - Skor\ pretest}{Score\ maximum - Score\ minimum}$$

Notes:

N-Gain : Normalized gain

Pretest : Average value of the initial learning test

Posstest : Average learning end test scores

The Gain index criteria are:

1. Score $(g) \geq 0.70$ high category;
2. Score $0.30 \leq (g) < 0.70$ medium category;
3. Score $(g) < 0.30$ low category.

To determine the effectiveness of the Learning Cycle 5E learning model, the following formula is used.

$$Efektivitas = \frac{N-Gain\ Experiment\ Class}{N-Gain\ Comparison\ Class}$$

The criteria used to state the effectiveness of the Learning Cycle 5E learning model in improving history learning outcomes can use the following criteria:

1. When effectiveness ≥ 1 then the Learning Cycle 5E learning model is effective in improving history learning outcomes.

2. When effectiveness < 1 then the Learning Cycle 5E learning model is not effective in improving history learning outcomes.

RESULTS AND DISCUSSION

The description of student learning outcomes data is carried out twice, namely the Pretest is the initial ability possessed by students before being given treatment. While the posttest is the final ability of students after being given treatment. The results of the recapitulation of the average pretest and posttest scores can be seen in Table 1 below.

Table 1. Average value of Pretest and Posttest

Class	Average	
	Pretest	Posttest
Experiment	56.98	85.07
Comparison	56.24	75.60

Table 1 above shows that the initial ability of students in the experimental class reached an average value of 56.98 while the final ability of students reached an average value of 85.07. For the initial ability of students in the comparison class, an average score of 56.24 was obtained, while the final ability of students was 75.60. For more details, see figure 1 below.

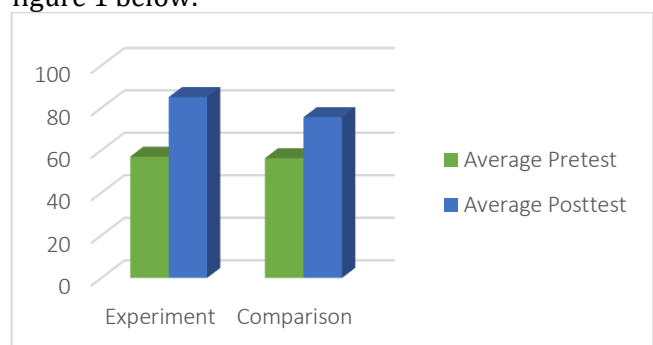


Figure 1. Diagram of the Pretest and Posttest Average Scores in the Experiment Class and Comparison Class

Based on the accumulation of statistical calculations using the normality test formula, the data shows the data value of 2 count > 2 tables. in the experimental class as well as the comparison class, the distribution is normal level with a confi-dence level of = 0.05 and degrees of freedom $(dk) = n-1$.

Description of Homogeneity Test Data

Based on the results of calculations using the homogeneity test value formula, the value of $F_{\text{count}} < F_{\text{table}}$ is obtained. So it can be concluded that the data variance between the two groups, namely the experimental class and the comparison class, is homogeneous. The results of the homogeneity test of the variance of the pretest and posttest at the level of confidence $\alpha = 0.05$.

Description of the T-Test Sample Independent Average Difference Test

Based on the results of the normality and homogeneity test, it was found that the data in the experimental class and the comparison class were normally distributed and the data variance between the two groups, namely the experimental class and the comparison class, was homogeneous. Therefore, the next step is to test the hypothesis with the independent sample t-test test formula to determine the effect of the Learning Cycle 5E learning model on history learning outcomes.

Analysis of the calculation of the t-test for posttest data using the t-test, the posttest value obtained a value of 3.85, where 3.85 is greater than t_{table} . Therefore, it can be concluded that the Learning Cycle 5E learning model affects the learning outcomes of history in Class XI students at SMA Negeri 34 Maluku Tengah ($3.85 \geq 2.00$). The determination of the decision is based on statistical calculations at the confidence level = 0.05, and degrees of freedom ($dk = 66$).

Description of Effectiveness Test Data

Based on the results of calculations using the effectiveness formula, the results in table 2 are as follows.

Table 2. Calculation Results of N-Gain

Value		Category
N-Gain Experiment Class	N-Gain Comparison Class	
0.64	0.44	Medium

Table 2 above shows that the N-Gain in the experimental class obtained a value of

0.64 in the "Medium" category, while the N-Gain in the comparison class obtained a value of 0.44 in the "Medium" category.

After obtaining the N-Gain value, the next step is to calculate the effectiveness of the Learning Cycle 5E learning model. The results of calculations using the effectiveness formula obtained a value of 1.454. From the effectiveness test criteria it is stated that if the score obtained is more than 1, then the Learning Cycle 5E learning model is declared effective in improving history learning outcomes in class XI SMA Negeri 34 Maluku Tengah.

CONCLUSIONS

Based on the results of data analysis and discussion, several conclusions can be drawn as follows. (1) The 5E Learning Cycle Model influences the learning outcomes of history students in class XI SMA Negeri 34; and (2) the 5E Learning Cycle model is effective in improving history learning outcomes in class XI students of SMA Negeri 34 Central Maluku.

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