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Implementation of the POE2WE Learning Model to Improve Critical Thinking and Report Writing Skills

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ABSTRACT (9 pt)

Objective: This research aims to determine the effectiveness of POE2WE learning model to improving critical thinking and report writing skills. **Method:** This research used classroom action research. Data collection used tests and non-tests. The sample of this research was 40 Indonesian Language Education students at Indraprasta PGRI University, Jakarta. **Results:** The research in cycle 1 and cycle 2 showed a significant increase in critical thinking and report writing skills using the POE2WE learning model. **Novelty:** The novelty of this research lies in the POE2WE learning model to improve critical thinking and report writing skills, thus giving rise to a new trend regarding awareness of the use of innovative and unique learning models, and providing researchers with an overview of future research opportunities related to effective and efficient learning models.

INTRODUCTION

Quality education has become a problem for the education system in Indonesia, caused by a lack of power quality teachers, teacher welfare, equality of education chance, facilities and infrastructure, and the cost of education. This should not be a sufficient answer for us, so that the successors will be born as a qualified and capable nation, empowered with competition. According to (Fitri, 2021) the quality of education in recent times is very worrying, which is caused by the presence of a number of problems in the Indonesian education system that have resulted in low quality. Shaturaev, (2021) in research that has been done stated that the problems of education in Indonesia, such as funding, poor academic performance, and a shortage of good teachers in the countryside and urban areas. These constraints make Indonesia far from superior, and Indonesian academics and the government need to carry on with educational reform.

Therefore, minimizing low-quality education in Indonesia is a necessary role for the government in the education sector. This is in line with Larasati, (2022) l opinion that low-quality education in Indonesia is caused by various factors, and to increase the quality of education in Indonesia, good cooperation between the government, schools, students, parents, and society is needed. According to Sain et al., (2024) the progress of knowledge and technology in the 21st century has profoundly influenced the metamorphosis of the world of education. Transformation education is a process of development and renewal influenced by temporal developments. One solution is to train creative and innovative teachers who utilize digital media to create interesting and

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challenging learning activities for students. This aims to educate participants on their own characteristics and provide a good education in their lives.

Quality learning increases if students can understand and apply the basic 6C skills of education namely 1. thinking critically; 2. communicate with clarity; 3. working in a collaborative manner; 4. embracing culture; 5. develop creativity; and 6. utilizing connectivity (Esquivel, 2022). In addition, Alifah, (2021) opined that to increase the quality of education, it should be customized to the circumstances of each region, so that local wisdom must be preserved. This will have a positive impact on pattern thinking, participant education, and their daily lives.

Increasing the skills of the 6C basics requires clear communication. Communication carried out by students covered both oral and written communication. Both types of communication must be understood and applied well so that students can understand and implement the material of the lessons they learned well and completely. Based on the results of field observations, several problems were found in students' report-writing activities. It was found that 75% of the students had difficulty in analyzing and evaluating problems. This is because low thinking ability is critical for students, which influences the completion of assignments given by the lecturer.

Critical thinking is an ability that must be owned by students, with critical thinking, students can develop reasoning skills based on information and knowledge so that they can make accountable answers (A. S., H. S., & J. D. E. Haryanti, 2024). According to Saputra, (2020), a critical thinking person will always search for and expose connections between issues discussed with problems or relevant experiences. Thus, students with critical thinking skills have good creativity in problem-solving. Critical thinking is widely considered important in education because of its potential benefits for individuals and society (Yücel, 2025). Through the ability to critical thinking student capable for dig the potential it has in a way purposeful awareness for analyze something information in a way logical so that produce the right decision. Next, Lu et al. (2025) considered critical thinking, creative thinking, cooperative skills, and communication skills as essential competencies for productivity and the development of human beings who are skilled individuals in the 21st century.

Factors that play an important role in developing critical thinking include discussion with lecturers and fellow students to express their ideas and thoughts (Zhong & Cheng, 2021). Furthermore, Ula, (2025) opined that the ability to think critically involves the ability to access, analyze and integrate information. Next, (Djalilova, 2024) critical thinking skills are a runway for preparing future professionals, through which critical thinking skills students can make decisions and solve problems objectively.

Students are people whose academic arguments must include data and facts that can be used as accountable answers. This is in line with (Dwyer, 2025) critical thinking is a reflective process that is purposeful and regulates the self alone; skills analysis, evaluation, and inference to produce logical conclusions to solve problems. Through critical thinking skills, students can analyze and evaluate problems using relevant data sources and make the right decisions. By utilizing critical thinking skills, students can

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build quality thinking that produces good learning (Syafitri et al., 2021). One of the factors that influence students' critical thinking ability is the learning model and strategy used by the lecturers. Each lecturer has different strategies depending on the expected learning objectives of the course. Learning objectives will be achieved if the lecturer is capable of creating interesting learning activities that motivate students to learn, one of which is the application of learning models that make students active. According to Hidayah et al. (2023), lecturers are required to change their learning models with the learning process.

Learning model is something activity deliberate learning designed aims to ensure that activities learning can passed and accepted with easy for participants educate (Ahyar, 2021). The learning model is closely related to the purposeful learning style to change behavior and motivate students to increase learning results. According to Ponidi et al. (2021), a learning model is a plan or guideline used in the learning process. Through learning models, students can be supported and guided in developing their skills (Butarbutar, 2024). The learning model must be customized to the goals, abilities, and characteristics of students who aim to increase their study results. So there are many learning models available used in activity learning, one of the learning models that can used in activity learning write report is the POE2WE learning model. According to Herdiani, (2020), The POE2WE learning model enables students to be more active in learning activities because this model gives students the opportunity to build their knowledge based on direct observation and experimentation. The POE2WE learning model involves several steps: prediction, observation, explanation, elaboration, writing, and evaluation (Panggabean et al., 2023). Sixth, this must be executed sequentially to obtain a clear solution to the problem so that students can analyze and think critically before drawing a conclusion.

The POE2WE learning model is suitable for learning to write reports for the following reasons: students trained using the POE2WE learning model are capable of predicting problems using critical thinking skills, they can explain the results of observations submitted through discussion groups, the results of the discussion can be connected with the context of everyday life, and students are capable of conveying reports in written form and evaluating the results of reports that have been compiled by them (Sidik, 2020).

The integration of critical thinking with reports through the use of the POE2WE learning series transforms the way the material is taught and assessed. This approach emphasizes that critical thinking skills are cognitive skills that must be trained and tested separately. POE2WE incorporates critical thinking skills into communicative tasks in Indonesian, specifically in report writing. It prioritizes writing reports in the Indonesian language, including presenting claims, evidence, explanations, and evaluations in Indonesian. Additionally, POE2WE integrates language forms with students' thinking abilities, fostering the development of both linguistic and cognitive skills during the reporting process.

The POE2WE learning model has been widely used in previous research but with different variables. Among them is research conducted by (Nana et al., 2023), (A. S. , H.

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S. , & J. D. E. Haryanti, 2024), and (Alatas et al., 2024). conducted a study on the influence of the POE2WE learning model but limited it to measuring students' critical thinking in the context of learning activities. Bashith and Amin, (2017) state that in activity learning, in addition to using the right learning model, students really need to have high critical thinking skills to solve problems. Based on the problems that have been put forward, this objective study makes an effort to improve critical thinking skills and corrective results in writing reports for students who attend study action classes.

Based on the explanation above, it is necessary to conduct a deep study on the application of the POE2WE learning model in activity learning. Therefore, this study aimed to determine the effectiveness of the POE2WE learning model in improving students' critical thinking skills and report writing. The novelty of this study lies in the POE2WE learning model for improving critical thinking skills and writing reports, which brings up trends about awareness of the use of innovative and unique learning models and provides a description to researchers about future research opportunities related to an effective and efficient learning model.

RESEARCH METHOD

This action classroom research was conducted at Indraprasta PGRI University in the Indonesian Language and Literature Education Study Program, subject studying writing. According to (Mustafa, 2022) study action class is effort study educators/candidates educator for solve something problems in class actions that have been planned based on the cycle that was made aim for improve and enhance quality classroom learning. Objects study this is the ability to think critically and write a report. The subjects of study this is 3rd semester students academic year 2024/2025, with 40 students, consisting of 20 men and 20 women. According to the procedure of the study action class, this research was conducted in a number of silkus, and every silkus consisted of four stages, namely planning, implementation, observation, and reflection.

Table 1. Validity Test Criteria

Validity Coefficients	Criteria
0.81 – 1.00	Very High
0.61 – 0,80	High
0.41 – 0,60	Medium
0.21 – 0,40	Low
0.00 – 0,20	Very Low

The data collection techniques used were both test and non-test techniques. The data analysis technique used in this study was a quantitative descriptive analysis. The maximum total score (N) for each instrument was 25 for the critical thinking ability test and 100 for the report writing test. The success criteria are 81-100, which is considered very good, or the classical completion limit is >75. Data were obtained through pre- and post-tests on climate change material, as well as a Likert-scale questionnaire. Prior to testing the research subjects, the researchers conducted validity and reliability tests on the critical thinking items using a sample of 35 students. Percentage analysis was used to

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assess the validity of the developed product. The validity criteria for the test results are presented in Table 1. The reliability test was also carried out with the criteria shown in Table 2.

Table 2. Reliability Test Criteria

Index	Reliability Level
0.80 – 1.00	Very High
0.60 – 0.79	High
0.40 – 0.59	Medium
0.20 – 0.39	Low
0.00 – 0.19	Very Low

The Cronbach's alpha reliability test aimed to determine whether the questionnaire maintained consistency when administered repeatedly. A questionnaire is considered reliable if the Cronbach's alpha value is greater than 0.6. Based on the table below, the Cronbach's alpha value is 0.806 > 0.6; thus, it can be concluded that the questionnaire is reliable and meets very high criteria.

Reliability Statistics

Cronbach's Alpha	N of Items
.806	10

The improvement in students' critical thinking skills during the learning process through the implementation of the POE2WE learning model was calculated using the percentage of critical thinking ability of students with the following formula:

$$E = \frac{n}{N} \times 100\%$$

Information:

E = presentation ability critical thinking student in a way classical
n = number of critical thinking scores/critical thinking test scores obtained
N = amount score maximum critical thinking/test critical thinking

Table 3. Percentage and Criteria for Critical Thinking Skills

Presentation	Category
89% - 100%	Very Critical
79% - 89%	Critical
64% - 79%	Enough Critical
54% - 64%	Less Critical
0 - 54%	Not Critical

Arikunto (Lestari, Ayu, 2021)

Analysis of Report Writing Results

The results of the report writing through the application of the POE2WE learning model were analyzed descriptively using the following formula:

$$P = \frac{n}{N} \times 100\%$$

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Information:

P = learning achievement scores
n = total learning outcome scores obtained
N = maximum number of learning outcome scores

The criteria for writing a report are shown in the following table.

Table 4. Report Writing Category

Score Range	Category
85 – 100	Very Good
75 – 85	Good
65 – 75	Enough
45 – 55	Not enough
0- 45	Very not enough Good

Reject measuring success study action class can be seen from results tests and assessments sheet observation, if results write report student achieve the expected CPL individually and 85% collectively classical research use indicator CPL 75 achievement. This means that students are said to succeed in writing reports if they achieve this CPL. in formative marks. The class that is said to complete at least 80% of the amount of students in class subject mark get mark reach CPL.

RESULTS AND DISCUSSION

Results

A. Students' Critical Thinking Skills Based on Observation Results

Based on the results of the initial observations, the category of students' critical thinking ability test with a percentage of not critical was found to be 65%, totaling 26 students, less critical 25%, totaling 10 students, and quite critical 48%, totaling 4 students. Furthermore, the analysis carried out at the reflection stage in Cycle 1 showed that there were still students whose critical thinking skills were in the less critical category; therefore, improvements and planning must be made to continue Cycle 2. Cycle 2 was conducted to further improve students' thinking skills. Analysis of Cycle 2 data showed an increase in critical thinking skills from the initial cycle, Cycle 1, to Cycle 2. This is shown in the following table and diagram.

Table 5. Improving Critical Thinking Skills

Category	Initial Cycle	Cycle 1	Cycle 2
Average Very Critical	0	1	4
Average Critical	0	5	17
Average Enough Critical	4	19	14
Average Less Critical	10	13	5
Average Not Critical	26	2	0
Presentation Very Critical	0%	3%	10%
Presentation Critical	0%	13%	43%

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Category	Initial Cycle	Cycle 1	Cycle 2
Presentation Enough Critical	10%	48%	35%
Less Critical Percentage	25%	33%	13%
Non- Critical Percentage	65%	5%	0%

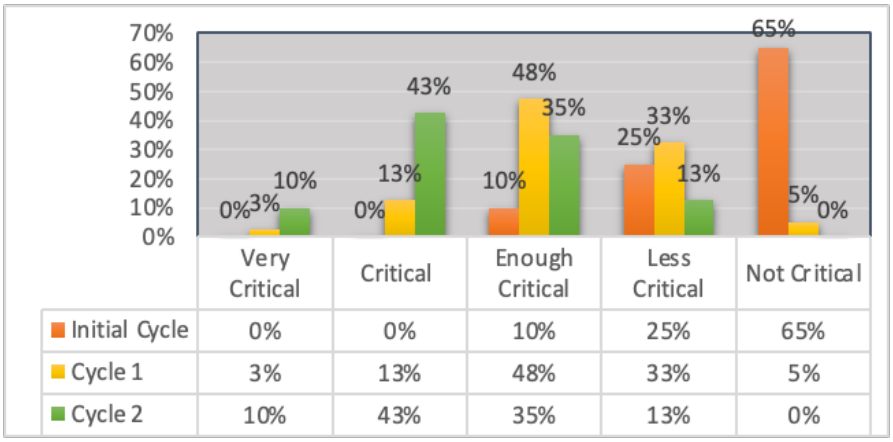

Figure 1. Improving Critical Thinking Skills

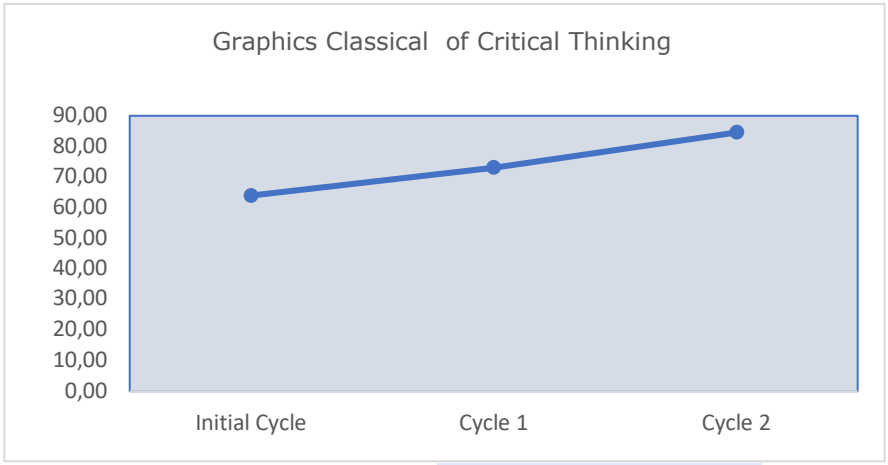

Figure 2. Improving Critical Thinking Skills

B. Students' Critical Thinking Skills Based on Tests

The critical thinking ability of students lexically based on the test results in cycle 1 in the uncritical category was 2 students (5%), 13 students (33%) in the less critical category, 19 students (48%) in the fairly critical category, 2 students (13%) in the critical category, and 1 student (3%) in the very-critical category. The critical thinking ability of students based on the lexical test in cycle 2 increased by 11.24% from 73.11% to 84.53% in cycle 2. There were 4 students (10%) in the critical thinking ability category, 17 students (43%) in the critical category, 14 students (35%) in the fairly critical category, and 5 students (13%) in the less critical category. No students were found in the non-critical category in Cycle 2.

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Table 6. Critical Thinking Skills Results

Nu	Cycle No	Average	Standard Deviation	Presentation of Completion
1	Initial Cycle	31.05	15.62	10%
2	Cycle 1	56.73	12.83	62.5%
3	Cycle 2	67.25	11.56	87.5%

Based on Table 6, the data show an increase in the average for each cycle. Meanwhile, the standard deviation decreases. This indicates that the scores are improving, with a smaller range between the lowest and highest scores (as indicated by the standard deviation). Regarding the increasing percentage standard, the cycle was conducted three times because the percentage had not yet reached the 85% standard. The percentage exceeded the standard in the third cycle, thus demonstrating that the implementation of critical thinking skills was complete.

C. Results of Student Report Writing

The results of writing student reports in each category of the initial cycle, Cycle 1, and Cycle 2 increased. The results of the analysis during the initial cycle were in the less category, with an average score of 52. The average learning outcomes of student report writing increased in cycle 1 to 67 in the sufficient category. Two students (5%) were in the very good category, eight students (20%) were in the good category, 18 students (45%) were in the sufficient category, 11 students (28%) were in the less category, and one student (3%) was in the very poor category.

The average score for student report writing improved to 78 in Cycle 2, falling into the good category. In Cycle 2, no student scored in the very poor category. Fifteen students (38%) scored in the very good category, 16 (40%) in the good category, eight (20%) in the adequate category, and one (3%) in the poor category. This can be seen in the following table and diagram.

Table 7. Improving Student Report Writing Results

Category	Initial Cycle	Cycle 1	Cycle 2
Average Very Good	0	2	15
Average Good	5	8	16
Average Enough	7	18	8
Average Less	8	11	1
Average Very Poor	20	1	0
Very Good Presentation	0%	5%	38%
Good Presentation	13%	20%	40%
Presentation Enough	18%	45%	20%
Less Percentage	20%	28%	3%
Very Poor Percentage	50%	3%	0

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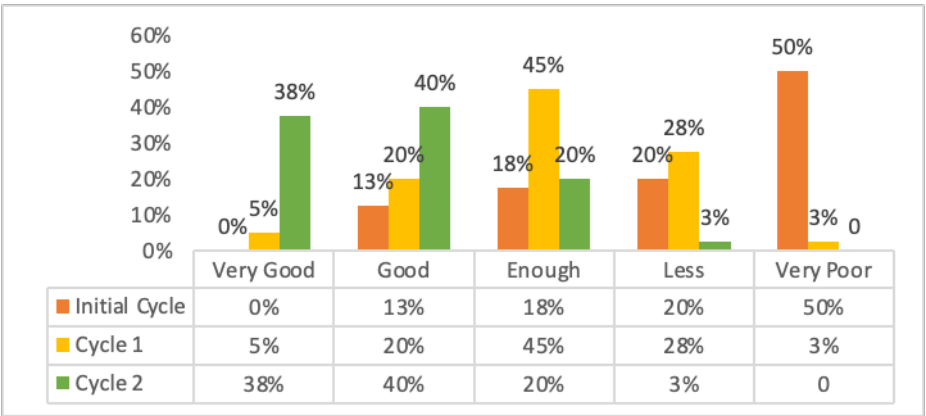

Figure 3. Improving Student Report Writing Results

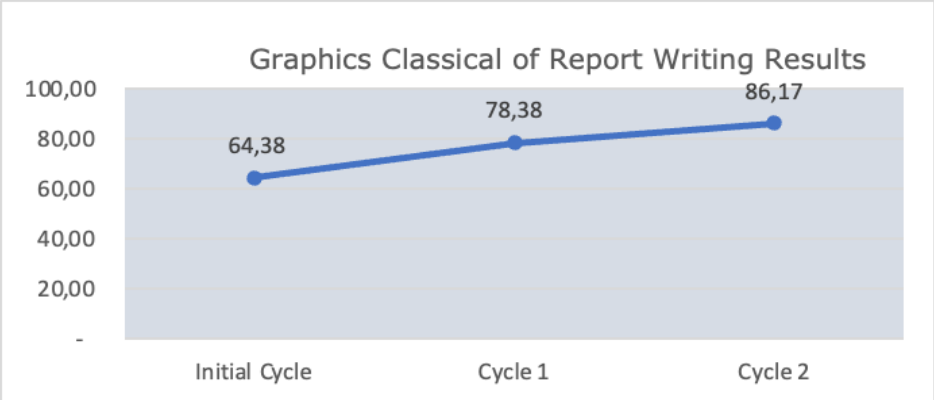

Figure 4. Improving Student Report Writing Results

Table 8. Report Writing Results

Nu	Cycle No	Average	Standard Deviation	Presentation of Completion
1	Initial Cycle	39.31	20.81	30%
2	Cycle 1	60.05	12.81	70%
3	Cycle 2	75.44	12.50	97.5%

Based on Table 8, the data show an increase in the average for each cycle. Meanwhile, the standard deviation is getting smaller. This indicates that the scores are improving, with a smaller range between the lowest and highest scores (marked by the standard deviation). Regarding the increasing percentage standard, the cycle was conducted three times because the percentage had not yet reached the 85% standard. The percentage exceeded the standard in the third cycle, which had a completion rate of 97.5%. Therefore, the results of the students' report writing were considered complete.

Discussion

Based on the results, the description above can be concluded that the application of the POE2WE learning model in learning to write report for 3rd semester students of Indraprasta PGRI University in the academic year 2024/2025 can improve students'

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abilities to analyze, solve problems, and draw conclusions. This is in line with Crawford's opinion (Trúsiková & Velmovská, 2022) about critical thinking indicators: (1) formulation of hypothesis, (2) collection of relevant information and data, (3) analysis and evaluation of information and data collected, (4) determination of conclusion from results of analysis and evaluation, (5) stating supporting arguments for conclusion, and (6) arrangement of independent. Batdı et al. (2024) emphasized that critical thinking training (CTT) can positively impact academic performance and the development of critical thinking skills. Critical thinking is not an innate factor but rather an acquired ability through continuous learning activities. Through activity learning, students are given the freedom to express themselves creatively, which can improve their ability to communicate complex ideas in a structured academic framework (Zuhra, 2024).

This study supports the results of a previous study by Mubarok (2020), entitled Analysis Implementation of the POE2WE Learning Model Based on Hands-on Activities for Critical Thinking Skills. Research results show that the POE2WE learning model based on Hands-on Activity can provide critical thinking skills in learning physics. This can be used as an alternative for educators to improve participants' skills and educate them to think critically and learn physics. These results are also in line with the research conducted by (Fajriyah, 2021) with title Implementation of the POE2WE model based on virtual learning in current electricity material Back and Forth (AC) for training High Order Thinking Skills (HOTS) in High School Students. The results show that the POE2WE learning model based on Virtual Learning is a viable alternative learning model that can be used to train high order thinking skills (HOTS) in high school students. This is seen from the improvement in the skills of thinking at the high level of HOTS, which is located in the category of both meaningful class There is improvement after implementation of the POE2WE learning model based on virtual learning.

According to (A. S. Haryanti et al., 2024) this POE2WE learning model can help student for integrate between information new and existing information there is with utilize critical thinking skills that he has so that student capable finish problems. The advantage of this study compared to previous studies is that it measures critical thinking ability at a time when students write reports using the POE2WE learning model. The selection of an appropriate learning model with cognitive level development plays an important role in determining success in writing skills (Bal & Öztürk, 2025). The principles of selecting learning models must be understood by the lecturer in managing learning activities, and the lecturer must ensure that the learning model chosen is in accordance with the learning objectives and the characteristics of the students overall.

To measure students' critical thinking ability, researchers use questions reinforced story with observation through sheet observations made by lecturers. In addition, the results of writing reports were measured using the method of writing a report based on the sequence of six syntaxes contained in the POE2WE learning model so that the writing results were more accurate. To support the results obtained from increased critical thinking skills and report writing through the POE2WE learning model, the researchers also conducted interviews with several lecturers guardian eye studying writing.

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The interviews revealed several pieces of information, including that the POE2WE learning model is very helpful for students in developing critical thinking skills in writing reports. Students do not just compile reports mechanically but are also able to identify their opinions through the process of critical thinking. The next statement is that students are more careful in interpreting data that is supported by accountable evidence. Each cycle in the learning activity of writing reports, students experience significant improvements but still need ongoing guidance and practice so that they are better at applying critical thinking processes in each activity that aims to foster student learning independence. In addition, in the learning activities, several challenges were encountered, namely limited learning time, lecturers' readiness to design learning using the POE2WE model, and limited facilities and learning resources.

CONCLUSION

Fundamental Finding : Based on the results of the research and discussion, it can be concluded that the POE2WE learning model can improve students' critical thinking skills. Students' critical thinking skills based on the test results in cycle 1 were in the fairly critical category with a percentage of (73.11%), while in cycle 2, it increased to (84.53%) and was included in the critical category. The application of the POE2WE learning model in learning to write reports showed an increase in the average report writing score from 67 in cycle 1 (sufficient category) to 78 in cycle 2 good category). Thus, learning activities using the POE2WE model can improve critical thinking skills and report writing. **Implications :** The research highlights the improvement in students' critical thinking and report writing skills using the POE2WE learning model. Thus, research on the application of this learning model has a significant impact on learning activities. **Limitation :** This research only examines the type of POE2WE learning model, and there are still many features of the learning model that can be used to improve critical thinking and report writing skills. **Future Research :** This research serves as a baseline reference for further research, particularly on the application of learning models. The new trends in learning models discovered in this study can serve as a reference for researchers seeking to innovate and identify new trends in the application of learning models to improve the learning outcomes.

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