



Journal of Educational Sciences

Journal homepage: <https://jes.ejournal.unri.ac.id/index.php/JES>



P-ISSN
2581-1657

E-ISSN
2581-2203

The Effectiveness of the POE (Predict, Observe, Explain) Learning Model on Students' Learning Outcomes

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ARTICLE INFO

Article history:

Received: 25 April 2025

Revised: 27 April 2025

Accepted: 29 April 2025

Published online: 30 May 2025

Keywords:

Model POE,
Learning Outcomes,
Quasi Experimental,
Innovative Learning

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Article Doi:

<https://doi.org/10.31258/jes.9.3.p.1704-1716>

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ABSTRACT

This study aims to examine the effect of the Predict, Observe, Explain (POE) learning model on students' learning outcomes in a specific subject. The research employed a quantitative approach with a quasi-experimental design, specifically a posttest-only control group design. The sample consisted of two eighth-grade classes at SMP Gajah Mada Bandar Lampung, selected through simple random sampling. The experimental class received instruction using the POE model, while the control class was taught using conventional methods. The research instrument was a multiple-choice test designed to assess learning outcomes in the cognitive domains of C3 (application) and C6 (evaluation). The test consisted of 20 items, of which 14 were valid, and had a reliability coefficient of 0.733. Data analysis using an independent samples t-test showed that the Sig. (2-tailed) value in Levene's Test was 0.001, indicating a significant difference in learning outcomes between the experimental and control classes. Therefore, the research hypothesis was accepted, demonstrating that the use of the POE model has a significant effect on improving students' learning outcomes. These findings suggest that innovative learning models such as POE are more effective than conventional methods in enhancing students' higher-order thinking skills.

1. Introduction

In the context of Roman education, the term refers to drawing out what lies within. Subsequently, in the English tradition, education has been regarded as a tool for moral enhancement and intellectual training (Mila, 2020). Experience, as the outcome of interactions between individuals and their environment, plays a vital role in helping people realize their full potential (Fisika & Siliwangi, 2020). Learning is an effort to transform uneducated students into educated individuals turning learners who initially lack knowledge into those who have acquired it (Poni et al., 2023). Islamic Religious Education (IRE) is a subject designed to develop students' character, moral conduct, and ethics grounded in Islamic values (Hidayati et al., 2024).

Learning outcomes in Islamic Religious Education in the era of rapid digitalization play a crucial role in the development of education and bring about behavioral changes in terms of knowledge, understanding, attitudes, and skills, leading to overall improvement in students. Learning outcomes are achieved when students are able to demonstrate a deep understanding of the material studied and apply it in real-life situations (Putri et al., 2022). Learning outcomes are not only measured by academic achievement but also by the development of attitudes, skills, and critical thinking abilities. In an ideal setting, students are actively engaged in the learning process, demonstrate curiosity, and possess a strong motivation to keep learning. They are capable of learning independently, collaborating in groups, and being open to feedback for self-improvement. Moreover, a supportive learning environment both physically and emotionally fosters a positive and enjoyable atmosphere for learning. Teachers serve as facilitators who guide and motivate students to reach their fullest potential (Ranialini et al., 2024).

One possible approach to improving the quality of education in Indonesia is by enhancing learning outcomes through the implementation of the POE (Predict, Observe, Explain) learning model (Lubis, 2023). It is an effective learning strategy that provides students with the opportunity to think, make predictions, conduct experiments, and communicate the results of their reasoning (Andersen, 2024). Within the POE (Predict, Observe, Explain) learning framework, students are encouraged to predict and experiment in response to a problem or question aligned with the lesson content (Lampung et al., 2023). Following the verification of the experimental results, students are expected to explain whether their observations and predictions were confirmed or refuted (Sarumaha et al., 2022).

Therefore, the POE learning model, according to the author, actively involves students in the learning process and aligns with the characteristics of the water cycle concept, making it effective in improving learning outcomes (Pujiastuti & Fitriani, 2021). The POE (Predict, Observe, Explain) instructional model offers significant potential to enhance students' academic achievement (Gulo, 2022). The POE (Predict, Observe, Explain) model, with its notable advantages, facilitates the exploration of students' prior knowledge evident in their initial predictions encourages meaningful discussions among peers and with teachers, inspires learners to investigate concepts they do not yet understand in order to validate their predictions, and nurtures curiosity-driven inquiry (Nurhabibah & Belajar, 2023).

Based on Figure 1, it can be seen that the initial learning outcomes of students at SMP Gajah Mada Bandar Lampung show varying levels of achievement. However, the learning outcomes of Grade VIII students in Islamic Education (PAI) at SMP Gajah Mada Bandar Lampung are still relatively low and have not met the minimum competency criteria (KKM). The data in the graph indicates that students' cognitive learning outcomes, particularly in the C3 (Applying) and C6 (Creating) domains, remain low.

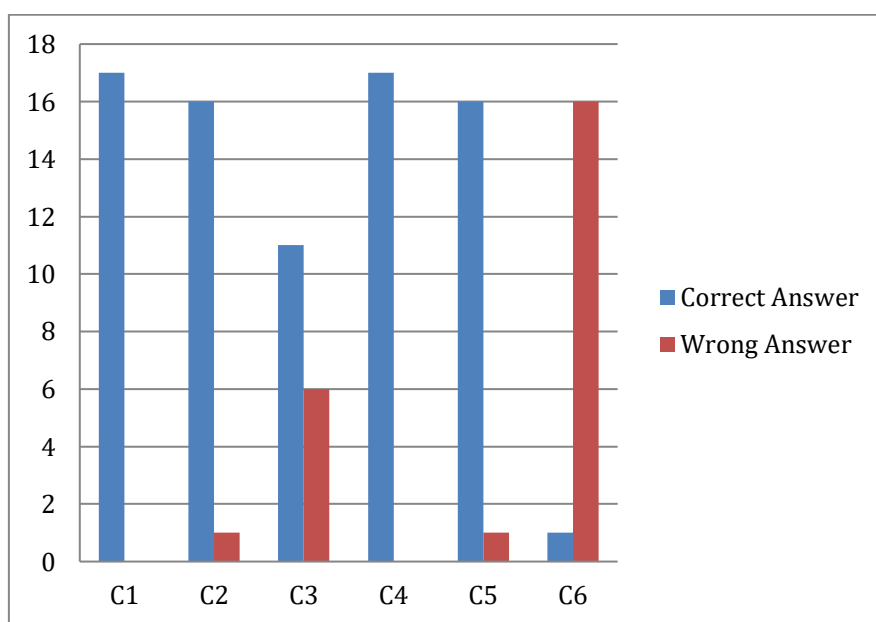


Figure 1. Recapitulation of Students' Learning Outcome Test Results in the Pre-Research Phase

In this study, the author aims to offer a solution by implementing the POE (Predict, Observe, Explain) learning model. This instructional approach is expected to have a positive impact, as it is designed to enhance students' learning outcomes. The POE model seeks to shift from conventional teaching methods by encouraging students to be more active and to engage in higher levels of collaboration during discussions with their peers. (Leaongso et al., 2024).

The POE (Predict, Observe, Explain) learning model has great potential to improve students' learning outcomes (Linda et al., 2022). The benefits of the POE (Predict, Observe, Explain) learning model include its ability to explore students' initial ideas and prior knowledge, as reflected in their prediction results (Rusnawati, 2022). and to understand students' perspectives, allowing the teacher to gain insight into their thinking, as well as to foster or enhance discussions both among students and between students and the teacher (Siregar & Syaputra, 2022). It can motivate students to investigate concepts they have not yet understood in order to verify their predictions and to increase their curiosity, encouraging further inquiry. (Sarnoto et al., 2023). Learning through the POE (Predict, Observe, Explain) model has a significant impact on enhancing students' conceptual understanding and critical thinking skills (Rena et al., 2024). The POE (Predict, Observe, Explain) learning model also has a significant impact on students' mental models (Jayanti et al., 2023).

The results of research conducted by several experts, including Rina Gustina (2023), Intan Dwi Hastuti (2023), Muhammad Nizaar (2021), Syaharuddin (2023), Ragil Setia Budi (2024), dan Reni Prabawati (2020) reveal that there is a significant influence on students' learning outcomes. Furthermore, based on the level of education, the POE (Predict, Observe, Explain) model impacts students' critical thinking and learning achievement (Yani et al., 2023). Although numerous previous

studies have examined the influence of the POE (Predict, Observe, Explain) learning model on students' learning outcomes, its overall impact remains limited, particularly within the scope of Islamic Religious Education. (Riska et al., 2023). Many studies have focused on general subjects such as Biology and Science. Therefore, the POE (Predict, Observe, Explain) model can also make a significant contribution to the development and improvement of more effective teaching models (Sukarjita & Fakhruddin, 2021) and efficient at SMP Gajah Mada Bandar Lampung.

By examining the influence of the POE (Predict, Observe, Explain) learning model on students' learning outcomes an aspect that has been rarely explored this study can significantly contribute to the advancement of the field of education (Kafiliani et al., 2023). The author investigates the findings of this study, offering a new perspective on how students' knowledge and learning outcomes can be influenced and enhanced through the POE (Predict, Observe, Explain) learning model (Lionanda et al., 2023). The implications of this study include the need to use interactive learning models in Islamic Religious Education (PAI) and the necessity for educators to make informed decisions in creating flexible and adaptable teaching methods (Rahmawati et al., 2022). Hasilnya, penelitian ini tidak hanya menambah pemahaman kita tentang bagaimana model pembelajaran POE (Predict, Observe, Explain) memengaruhi hasil belajar peserta didik dalam pembelajaran PAI. but it can also make a meaningful contribution to the development and improvement of more effective and efficient learning models at SMP Gajah Mada Bandar Lampung (Model et al., 2022).

2. Methodology

This study employs a quantitative approach using a quasi-experimental design, which is a type of experimental research conducted in a classroom setting where the researcher does not have full control over subject randomization. The design used is a posttest-only control group design, in which two classes are designated as the experimental and control groups. The experimental group receives treatment using the POE (Predict, Observe, Explain) learning model, while the control group receives conventional instruction. The purpose of this study is to examine the effect of implementing the POE model on students' learning outcomes in a specific subject

This study was conducted at SMP Gajah Mada Bandar Lampung during the even semester of the 2024/2025 academic year. The research population consisted of all eighth-grade students, divided into three classes: VIII A, VIII B, and VIII C, with a total of 89 students. The sampling technique used was simple random sampling, which provided an equal chance for each class to be selected. Based on the results of the draw, class VIII B was assigned as the experimental group and class VIII C as the control group. Both classes participated in the learning activities The learning process was carried out according to each group's respective method, followed by the same posttest to measure learning outcomes.

The POE learning model consists of three core stages. First, the Predict stage, where the teacher presents a problem and students are asked to make predictions along with justifications for their predictions. Second, the Observe stage, where students conduct experiments or observations related to the problem presented and record the results to verify the accuracy of their initial predictions. Third, the Explain stage, where students and the teacher discuss the results of the experiment together. If the students' predictions are correct, the teacher reinforces them with additional explanations; if not, the teacher helps students explore the reasons for the discrepancies. This process aims to build conceptual understanding through active scientific inquiry.

The instrument used in this study was a multiple-choice test developed to measure students' cognitive learning outcomes at the C3 (applying) and C6 (evaluating) levels. A total of 20 questions were constructed and tested for validity using the Pearson Product-Moment formula, resulting in 14 questions being declared valid. The reliability test was conducted using the Cronbach's Alpha formula, yielding a coefficient of 0.733, indicating that the instrument has high reliability and is dependable for measuring learning outcomes. This test was administered as a posttest after the learning process was completed in both classes.

The posttest data were first analyzed using prerequisite tests, namely the normality and homogeneity tests, to ensure that the data met the assumptions required for statistical analysis. Subsequently, a hypothesis test was conducted using an independent samples t-test to determine whether there was a significant difference between the learning outcomes of students who participated in the POE learning model and those who did not. The results of this analysis are expected to provide valid information regarding the effectiveness of the POE model in improving students' learning outcomes, particularly in their ability to apply and evaluate the knowledge they have acquired.

3. Result and Discussion

Results

This research was conducted at SMP Gajah Mada Bandar Lampung. In this study, various data collection techniques were used with the distribution of multiple-choice tests that were in accordance with the learning outcome indicators which were then tested for validity and reliability which the Cronbach's Alpha of 0.733 with number of data 21. The following are the results of the data obtained through the reliability test

Based on the results of the validity and reliability tests conducted on the trial class, 14 items showed a significance value greater than 0.394, indicating that the instrument used is sufficiently valid. Meanwhile, the reliability test yielded a Cronbach's Alpha value of 0.733, which is greater than 0.6, confirming that the instrument is reliable. This value indicates that the test instrument is adequate for

measuring the research variables. Data analysis was performed on classes VIII B and VIII C (experimental) and class VIII C (control) to assess the learning outcomes of students in the Islamic Religious Education (PAI) subject. The data were analyzed to examine how the experimental and control classes performed after the implementation of the learning model, to determine whether the results met the expected outcomes. Data analysis was conducted using the posttest scores obtained after the study. The analysis stages included normality testing, homogeneity testing, and t-test analysis.

Prerequisite Test Results

1. Normality Test

The normality test was conducted to determine whether the sample comes from a population with a normal distribution. This study used the Lilliefors test to examine the normality of the sample (Table 1).

Table 1. Normality Test

	Group	Tests of Normality			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DATA	1.00	.083	81	.200*	.989	81	.731
	2.00	.120	81	.006	.970	81	.058

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

After conducting the normality test using the Shapiro-Wilk method, the significance value (Sig.) shown in the table above was 0.001 for the experimental class and 0.278 for the control class. Since both values differ from the significance level of 0.05, the experimental class’s significance value indicates a non-normal distribution, while the control class’s significance value indicates a normal distribution.

After conducting the normality test using the Shapiro-Wilk method, the results indicated that the data were not normally distributed; therefore, a follow-up test was conducted using the Mann-Whitney U test²). The homogeneity test is used to determine whether the variances of several populations in the study are equal. This study employed Levene’s test to examine the homogeneity of the samples. According to the homogeneity test criteria, with a significance level of $\alpha = 0.05$, the data are considered homogeneous if the Sig. value is greater than 0.05, and thus accepted (Table 2).

Table 2. Homogeneity Test

		Test of Homogeneity of Variances			
		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	1.128	1	34	.296
	Based on Median	.892	1	34	.352
	Based on Median and with adjusted df	.892	1	31.759	.352
	Based on trimmed mean	1.162	1	34	.289

After conducting the homogeneity test using Levene’s test, the significance values

based on various calculation methods, such as the mean (0.296), were obtained. According to the testing criteria, if the significance value is greater than 0.05, the data are considered to have homogeneous variances. Therefore, it can be concluded that the data from both the experimental and control groups are homogeneous. This indicates that the variances between the groups are consistent, meaning the data meet the homogeneity assumption and are suitable for further statistical analysis.

3). *T-Test*

The independent samples t-test in this study was used to assess the final ability of the sample. The testing procedure is as follows (Table 3) to test the above hypothesis, the author employed the pooled variance test formula.

Table 3. Hypothesis Test

	Levene's Test for Equality of Variance					t-test for Equality of means			
	F	sig	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Data Equal Variance assumed	1.128	.296	3.659	34	.001	1.89474	.51780	.84245	2.94703
Data Equal Variance not assumed			3.714	33.249	.001	1.89474	.51012	.85719	2.93228

Based on the results of the Independent Samples T-Test analysis, it was found that the (Sig. 2-tailed) value in Levene's Test for Equality of Variances was 0.001. Therefore, it can be concluded that the applied learning model has a significant effect on the tested variable, supporting the research hypothesis that there is a significant difference between the experimental group using a specific learning model and the control group using conventional teaching methods. These results indicate that the implementation of the innovative learning model yields better outcomes compared to the conventional method.

Discussion

Based on the tested and presented research results, the normality test for both the experimental and control classes showed that the data were not normally distributed, as indicated by the significance level of $0.001 < 0.05$. Because the experimental class data did not meet the normality assumption, the Mann-Whitney test was conducted, which confirmed that the data were normally distributed. The homogeneity test indicated that the data were homogeneous, with a significance level greater than 0.05, specifically $0.296 > 0.05$. However, the data obtained from the t-test showed a Levene's Test for Equality of Variances significance value (Sig.

2-tailed) of $0.001 < 0.05$. Therefore, it can be concluded that the POE (Predict, Observe, Explain) model is effective in improving students' learning outcomes.

The implementation of the POE (Predict, Observe, Explain) learning model in the Islamic Religious Education subject at SMP Gajah Mada Bandar Lampung has been very effective, both in terms of student learning outcomes and research results during the action implementation. Students were able to follow the lessons well, and teachers successfully applied the POE learning model. Student activity during the learning process using the POE model increased, as proven by observational data. Therefore, the use of the POE learning model in the Islamic Religious Education subject at SMP Gajah Mada Bandar Lampung has a significant impact on student learning outcomes. This study concludes that the POE learning model is effective in improving students' learning achievements.

The POE learning model explores students' conceptual understanding through three steps. The three main steps in the POE learning model are described as follows: (1) Predict involves making a hypothesis about an event or phenomenon. Students predict the answer to a problem presented by the teacher, then write down their prediction along with the reasoning. They formulate an initial hypothesis based on their prior knowledge. (2) Observe is the process where students make observations about what occurs. Students observe either directly or indirectly, record what they observe, and relate their prior predictions to the observed results. they obtain. (3) Explain is the process in which students provide explanations regarding the consistency between their predictions and the results they observed during the observation phase (Yusnani et al., 2024).

According to White and Gystone, the POE (Predict, Observe, Explain) learning model is a knowledge development process that begins with predicting a solution to a problem, followed by conducting an experiment to test the prediction, and finally concludes with explaining the results of the experiment (Hasna Nur Alifah et al., 2023). The strategy of the learning model was introduced by Huinker and Laughlin. It consists of three phases: thinking, talking, and writing. First, students are given a problem and asked to think about possible answers to the problem. Then, students work in groups to discuss the problem. Finally, each student individually writes the results of their group discussion in their own words to demonstrate their understanding of the concept learned (Joni Wilson Sitopu, 2024).

Based on the research conducted by Shea A. Leongso, the data in Table 4 shows that the average score in the experimental class is higher compared to the control class (Sarnoto et al., 2023). This is evidenced by the average score of 84.88 in the experimental class, compared to 78.17 in the control class. The difference in average scores between the two classes is 6.71, leading to the conclusion that the experimental class using the POE (Predict, Observe, Explain) learning model has a positive effect on the students' average learning outcomes (Ramadansur et al., 2023). students better compared to the control class that used the conventional learning model (Amal et al., 2023). However, testing and analysis using an Independent Sample t-test are necessary to determine the effect of implementing

the POE learning model assisted by PhET media on students' learning outcomes (Yupani et al., 2022).

Based on the SPSS output in Table 6, Levene's Test for Equality of Variances shows an F value of 1.402 with a significance of $0.242 > 0.05$. Therefore, the independent sample t-test analysis using the assumption of equal variances assumed yields a sig. (2-tailed) value of 0.018, which is less than 0.05. This leads to the rejection of the null hypothesis (H0) and acceptance of the alternative hypothesis (H1). The analysis results indicate that there is a significant difference in students' learning outcomes (Pamungkas & Koeswanti, 2022). On the topic of chemical bonding, using the POE (Predict, Observe, Explain) learning model assisted by PhET media, compared to conventional learning methods in the tenth grade at MAN 1 Ambon. (Lela et al., 2023). This is in line with Juniari's (2014) research, which found a significant difference in learning outcomes between students using the POE model assisted by PhET media and those taught with conventional methods (Hasna Nur Alifah et al., 2023).

Based on the research conducted by Nurlinda, the analysis showed a significance value (2-tailed) of $0.000 \leq 0.05$, thus H0 was rejected and H1 accepted, indicating that there is an effect on students' learning outcomes after the implementation of the learning strategy (Nurrawi et al., 2023). The two classes consisted of the Experimental class, which used the POE-based learning strategy (Predict-Observe-Explain) and achieved an average score of 78.80, and the Control class, which used the conventional learning model and had an average score of 58.26. This is supported by research conducted by Dewi, N. N. E., et al. (2020) entitled 'Development of Biology Module Using the POE (Predict-Observe-Explain) Method Accompanied by Character Values on the Respiratory System Material.' This study explains that there is an influence of implementing the POE learning model (Predict, Observe, Explain) on students' learning outcomes (Fayakun & Joko, 2023).

This study shows a significant difference compared to previous research related to the implementation of the POE (Predict, Observe, Explain) learning model. Earlier researchers investigated the effectiveness of the POE model in enhancing conceptual understanding of physics, science, or general science among high school students, using a qualitative approach and focusing on analyzing student responses to scientific phenomena. In contrast, my study applies the POE model to junior high school students in the subject of Islamic Religious Education, employing a quantitative experimental approach to measure the effectiveness of the POE learning model on students' learning outcomes in Islamic Religious Education. Thus, this research not only broadens the scope of POE model implementation to a different educational level but also contributes quantitative data that strengthens the empirical evidence of the model's effectiveness in the context of basic education (Pratiwi et al., 2025).

This study aims to examine the effectiveness of the POE (Predict, Observe, Explain) learning model in improving students' learning outcomes in the subject of Islamic Religious Education. The data analysis results indicate that the

implementation of the POE learning model has a significant effect on students' learning outcomes, as demonstrated by the average scores of both groups, with a significance value of 0.001 (which is less than the alpha level of 0.05). Additionally, observations during the study showed that most students tended to be more active and enthusiastic during the learning process (Khadriah & Azizah, 2025).

Therefore, it is important for teachers to provide clear guidance to students regarding the learning system being implemented (Rachmadhani & Kamalia, 2023). This finding indicates that although the POE (Predict, Observe, Explain) learning model has the potential to improve learning outcomes during the learning process, its effectiveness on learning results also requires adequate time allocation and support (Noerhandayani & Solihat, 2022). Therefore, the researcher recommends that educators pay greater attention to students' readiness before implementing innovative learning models integrated with technology (Rachmadhani & Kamalia, 2023).

4. Conclusion

Based on the data analysis using an independent samples t-test, it can be concluded that the Predict, Observe, Explain (POE) learning model has a significant effect on students' learning outcomes. The significance value of indicates a clear difference between the experimental group using the POE model and the control group employing conventional teaching methods. These findings demonstrate that the POE learning model is effective in enhancing students' higher-order thinking skills, particularly at the cognitive levels of C3 (applying) and C6 (evaluating) For future researchers, it is recommended to further develop this study by expanding the sample size or applying it at different educational levels in order to test the consistency of the POE model's effectiveness in more diverse contexts. Additionally, it would be beneficial to broaden the learning outcome assessment instruments to include affective and psychomotor domains, so that the impact of the POE learning model can be understood more comprehensively.

References

- Amal, Rifa'i, & Hindarto, N (2023). Pengembangan Model Pembelajaran Predict, Observe, Discuss, Explain (Pode) Untuk Meningkatkan Hasil Belajar Ipa Sekolah Dasar Negeri Kompleks Ikip Makassar. *Jurnal of Primary Educational*, 2(2), 85–90. <http://journal.unnes.ac.id/sju/index.php/jpe>
- Andersen, (2024). Learning in. *Theory Into Practice*, 43(4), 281–286.
- Budi, R.S & Mardati, A. (2024). Enhancing 5th-Grade Student Learning Outcomes with the Predict-Observe-Explain Learning Model in Integrated Thematic Learning. *International Journal of Learning Reformation in Elementary Education*, 3(02), 110–119. <https://doi.org/10.56741/ijlree.v3i02.639>
- Fayakun, M., & Joko, P. (2023). Efektivitas Pembelajaran Fisika Menggunakan Model Kontekstual (CTL) Dengan Metode predict, Observe, Explain Terhadap Kemampuan Berpikir Tingkat Tinggi. *Jurnal Pendidikan Fisika*
-

-
- Indonesia, 11(1), 49–58. <https://doi.org/10.15294/jpfi.v11i1.4003>.
- Gulo,A.(2022). Penerapan Model Discovery Learning Terhadap Hasil Belajar Peserta Didik Pada Materi Ekosistem. *Educativo: Jurnal Pendidikan*, 1(1), 307–313. <https://doi.org/10.56248/educativo.v1i1.54>
- Gustina, R., Hastuti, I. D., Nizaar, M., & Syaharuddin, S. (2023). Predict Observe Explain Learning Model : Implementation and Its Influence on Students' Critical Thinking Ability and Learning Outcomes (A Meta-Analysis Study). *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*,9(2), 706. <https://doi.org/10.33394/jk.v9i2.7388>
- Hasna N.A, Umi Virgianti, Muhammad Imam Zamah Sarin, Dicky Amirul Hasan, Fina Fakhriyah, & Erik Aditia Ismaya. (2023). Systematic Literature Review: Pengaruh Media Pembelajaran Digital pada Pembelajaran Tematik Terhadap Hasil Belajar Siswa SD. *Jurnal Ilmiah Dan Karya Mahasiswa*, 1(3), 103–115. <https://doi.org/10.54066/jikma.v1i3.463>
- Hidayati, U., Sela, D., Selvia, E., & Azizah, N. (2024). *learning outcomES : HOW DOES THE Jurnal Inspiratif Pendidikan*. 18–33.
- Jayanti, R. D., Romlah, & Saregar, A. (2023). Seminar nasional pendidikan program studi pendidikan fisika Bandarlampung 28 Mei 2016. *Efektivitas Pembelajaran Fisika Model Problem Based Learning (PBL) Melalui Metode POE Terhadap Kemampuan Berpikir Tingkat Tinggi Peserta Didik*, Hal: 208-214.
- Joni W.S. (2024). Pengembangan bahan ajar biologi sma pada materi sistem indra manusia menggunakan model predict observe explant (poe) untuk meningkatkan hasil belajar siswa. *Jurnal Metabio*. 2020., 2(2), 8–13.
- Kafiliani, D., Suryawan, A., Triana, P. M., & Salsabila, S. (2023). Pengaruh Model Predict, Observe, Explain (POE) Terhadap Hasil Belajar IPA Kelas V Madrasah Ibtidaiyah. *MODELING: Jurnal Program Studi PGMI*, 10(4), 538–549.
- Leaongso, S. A., Utubira,Y., & Karepesina, N.G. (2024). Penerapan model pembelajaran poe (predict, observe, explain) berbantuan media phet terhadap hasil belajar peserta didik pada materi ikatan kimia kelas x man 1 ambon. *mjoce*, 12(2), 136–145.
- Lela,M., Amilda, A., & Jayanti, E. (2023). Efektivitas Penggunaan Modul Pembelajaran Kimia Berbasis POE Materi Larutan Elektrolit dan Non Elektrolit terhadap Hasil Belajar. *Orbital: Jurnal Pendidikan Kimia*, 7(1), 11–24. <https://doi.org/10.19109/ojpk.v7i1.17202>
- Linda, N., Lestari, P. I., & Maya, S. (2022). Pengaruh Strategi Pembelajaran Berbasis Poe (Predict-Observe-Explain) Terhadap Hasil Belajar Siswa. *Binomial*, 5(2), 169–179. <https://doi.org/10.46918/bn.v5i2.1514>
- Lionanda, G., Sholahuddin, A., & Kusasi, M. (2023). Model pembelajaran predict-observe-explore (poe) pada materi hidrolisis garam untuk meningkatkan keterampilan berpikir kritis dan hasil belajar The Predict-Observe-Explore (POE) *Instructional Model for Salt Hydrolysis Material to Enhance Critical Thin*. 7(2), 92–109.
- M. Taufiq. (2021). Konsep dan Sumber Hukum: Analisis Perbandingan Sistem Hukum Islam dan Sistem Hukum Positif. *Istidlal: Jurnal Ekonomi Dan Hukum Islam*, 5(2), 87. <https://doi.org/10.35316/istidlal.v5i2.348>
-

-
- Mila Roysa, M. N. A. (2020). Inovasi Pembelajaran Digital Menggunakan Model Poepada Mata Kuliah Jurnalistik Di Prodi Pbsi Universitas Muria Kudus. *Susando*, 3..
- Noerhandayani, T., & Solihat, R. (2022). Penggunaan POE-inquiry melalui blended learning terhadap hasil belajar siswa pada pembelajaran materi sistem respirasi (The use of POE-inquiry through blended learning on students' learning outcome in lessons about respiratory system). *Assimilation: Indonesian Journal of Biology Education*, 4(1), 44–49. [//doi.org/10.17509/ajbe.v4i1.34826](https://doi.org/10.17509/ajbe.v4i1.34826)
- Nurrawi, A. E. P., Zahra, A. T., Aulia, D., Greis, G., & Mubarak, S. (2023). Motivasi Belajar Siswa Terhadap Hasil Belajar Matematika. *Plusminus: Jurnal Pendidikan Matematika*, 3(1), 29–38. <https://doi.org/10.31980/plusminus.v3i1.1220>
- Pamungkas, W. A. D., & Koeswanti, H. D. (2022). Penggunaan Media Pembelajaran Video Terhadap Hasil Belajar Siswa Sekolah Dasar. *Jurnal Ilmiah Pendidikan Profesi Guru*, 4(3), 346–354. <https://doi.org/10.23887/jippg.v4i3.41223>
- Poni, L, Corry Yohana, & Maulana Amirul Adha. (2023). Pengaruh Fasilitas Belajar, Motivasi Belajar, Dan Disiplin Belajar Terhadap Hasil Belajar Mata Pelajaran Humas Kelas Xi Otkp Di Smkn Jakarta Barat. *Jurnal Media Administrasi*, 8(1), 35–47. <https://doi.org/10.56444/jma.v8i1.500>
- Prabawati, R., WH, N., & Alimah, S. (2020). The Influence Of The Inquiry Learning Model On Student Learning Outcomes. *Journal of Biology Education*, 9(1), 435–441. <https://doi.org/10.58432/mahir.v2i3.1028>
- Pratiwi, A., Azizah, N., Saputra, M. I., Mustofa, M., Islam, U., Raden, N., & Lampung, I. (2025). *Student Learning Outcomes : Innovative Learning with an. 5*, 63–74.
- Pujiastuti, H., & Fitriani, R. N. (2021). Pengaruh Self-Efficacy Terhadap Hasil Belajar Matematika. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 5(3), 2799.
- Putri, M., Giatman, M., & Ernawati, E. (2022). *Manajemen kesiswaan terhadap hasil belajar. 6*(2), 119–125.
- Rachmadhani, S. A. D., & Kamalia, P. U. (2023). Analisis Strategi Pembelajaran Berdiferensiasi terhadap Hasil Belajar Peserta Didik: Systematic Literature Review. *Asatiza: Jurnal Pendidikan*, 4(3), 178–192. <https://doi.org/10.46963/asatiza.v4i3.1231>
- Rahmawati, T. A., Supardi, Z. A. I., & Hariyono, E. (2022). Pengembangan Media Pembelajaran Interaktif Berbasis Video dengan Model POE (Predict Observe Explain) untuk Melatihkan Keterampilan Proses IPA Siswa Sekolah Dasar. *Jurnal Basicedu*, 6(1), 1232–1242. <https://doi.org/10.31004/basicedu.v6i1.2267>
- Ramadansur, R., Dinata, M., & Rahmadhani Al-Khani, A. N. (2023). Pengaruh Model Pembelajaran Kooperatif Tipe Group Investigation (Gi) Berbantu Audio Visual Terhadap Motivasi Dan Hasil Belajar Siswa Kelas X Sman 3 Pekanbaru. *Bio-Lectura : Jurnal Pendidikan Biologi*, 10(1), 54–64. <https://doi.org/10.31849/bl.v10i1.13573>
- Ranialini, N., Azizah, N., Hijriyah, U., & Anwar, S. (2024). Eksperimentasi Model Pembelajaran FERA dan ICI terhadap Hasil Belajar Peserta Didik pada
-

- Mata Pelajaran Pendidikan Agama Islam Experimentation of FERA and ICI Learning Models on Student Learning Outcomes in Islamic Religious Education Subjects. *Intizar*, 30(2).
- Rena, T., Mashuri, A., & Saidah, K. (2024). Efektivitas Model POE (Predict , Observe , Explain) Dalam Pembelajaran Ipa Materi Perubahan Wujud Zat Terhadap Hasil Belajar Siswa Kelas IV SDN *Gedangsewu 1 Tahun*. 549–558.
- Riska, Nasrah, & Nurul Magfirah. (2023). Pengaruh Penerapan Model Pembelajaran Poe (Prediction Observation Explanation) Terhadap Hasil Belajar IPA Pada Murid Kelas V SD Inpres Sengka. *JKP: Jurnal Khasanah Pendidikan*, 1(3), 363–372. <https://doi.org/10.58738/jkp.v1i3.226>
- Sarnoto, A. Z., Rahmawati, S. T., Ulimaz, A., Mahendika, D., & Prastawa, S. (2023). Analisis Pengaruh Model Pembelajaran Student Center Learning terhadap Hasil Belajar: Studi Literatur Review. *Jurnal Pendidikan Dan Kewirausahaan*, 11(2), 615–628. <https://doi.org/10.47668/pkwu.v11i2.828>
- Sarumaha, M., Harefa, D., Ziraluo, Y. P. B., Fau, A., Venty Fau, Y. T., Bago, A. S., Telambanua, T., Hulu, F., Telaumbanua, K., Lase, I. P. S., Laia, B., Ndraha, L. D. M., & Novialdi, A. (2022). Penggunaan Model Pembelajaran Artikulasi Terhadap Hasil Belajar Siswa Pada Mata Pelajaran IPA Terpadu. *Aksara: Jurnal Ilmu Pendidikan Nonformal*, 8(3), 2045. <https://doi.org/10.37905/aksara.8.3.2045-2052.2022>
- Siregar, D. M., & Syaputra, E. (2022). Pengaruh Disiplin Belajar terhadap Hasil Belajar Bahasa Indonesia. *Jurnal Multidisiplin Dehasen (MUDE)*, 1(3), 119–124. <https://doi.org/10.37676/mude.v1i3.2390>
- Sukarjita, I. W., & Fakhrudin, F. (2021). Analisis Efektivitas Model Pembelajaran Predict Observe Explain dalam Menanamkan Pemahaman Konsep dan Sikap Ilmiah Siswa. *Haumeni Journal of Education*, 1(2), 57–67. <https://doi.org/10.35508/haumeni.v1i2.5751>
- Yani, Y., Bagus, I., & Arjaya, A. (2023). Pembelajaran Biologi Dengan Menggunakan Model Predict Observe Explain Terhadap Hasil Belajar Kognitif Siswa Di Smas Muhammadiyah Sumbawa Besar. *Jurnal Biologi Kontekstual*, 3(1), 2656–9043.
- Yupani, N. P. E., Garminah, N. N., & Mahadewi, L. P. P. (2022). Pengaruh Model Pembelajaran Predict-Observe-Explain (POE) Berbantuan Materi Bermuatan Kearifan Lokal Terhadap Hasil Belajar IPA Siswa Kelas IV. *MIMBAR PGSD Undiksha*, 1(1), 1–12.
- Yusnani, A., Suhartono, S., & Wahyudi, W. (2024). Penerapan Model Predict Observe Explain (POE) dengan Media Konkret untuk Meningkatkan Hasil Belajar IPA Siswa Kelas V. *Kalam Cendekia: Jurnal Ilmiah Kependidikan*, 12(1). <https://doi.org/10.20961/jkc.v12i1.75962>.

How to cite this article:

Mastura, A. U., Baharudin., Azizah., Hasanah, I. F., & Irawan Z, R. (2025). The Effectiveness of the POE (Predict, Observe, Explain) Learning Model on Students' Learning Outcomes. *Journal of Educational Sciences*, 9(3), 1704-1716.