



EQUATOR SCIENCE JOURNAL (ESJ)

e-ISSN: 2988-3881

Journal homepage:

<https://ejournal.edukhatulistiwa.com/index.php/ESJ>



Analysis of Student Learning Motivation Through The Predict, Observe, Explain (POE) Learning Model

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Received: February 4th, 2024. Revised: February 24th, 2024. Accepted: February 29th, 2024
DOI: 10.61142/esj.v2i1.110

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Keywords:

Predict, Observe and Explain (POE), Learning Motivation

ABSTRACT

This study aims to determine how student learning motivation after applying the Predict, Observe and Explain (POE) learning model. The method used in this study is an experimental method with the population, namely students of SMA Negeri 2 Lubuklinggau class X. Based on the population, sampling is carried out in class X IPA 2 using the Simple Random Sampling technique because the sample is a randomly taken population. The instrument used is in the form of a motivation questionnaire from each student, where the test results will be seen based on motivation indicators and percentages. From the results of the analysis, 94% of students have very good motivation, 6% of students have good learning motivation, 0% of students have less learning motivation, and 0% of students have very less learning motivation. Based on the results of the analysis obtained, it can be concluded that after the implementation of the POE learning model students have high motivation to do physics learning. This can be seen in the percentage which in the table shows excellent and good data analysis.

INTRODUCTION

The development of an education at this time, has begun to be sophisticated. Both in terms of technology, and science have brought very rapid changes and improvements in human life. Education is an activity and effort to create self-potential in qualified humans (Muzdalifah & Ismail, 2023; Hidayah & Yuberti, 2018). Learning is an active process where students build knowledge based on what has been done or the knowledge that the student already has (Henukh et al., 2022; Trianto, 2020). Learning is an effort to change behavior that will bring a change to each individual to increase knowledge (Sardiman, 2020; Supriyadi & Reski, 2020). Learning is a step taken to change a person as a whole as what has been done in interaction with the surrounding environment (Marissa, 2022). Learning outcomes are the abilities of every individual who has actively participated in learning, and there is a change from within a person (Nurrita, 2018). Learning outcomes are changes in individual behavior both during learning and outside the learning environment at school that affect aspects of knowledge, attitudes, and skills (Aqilah & Lathifah, 2023; Noor, 2020).

The Predict, Observe and Explain (POE) learning model is a model that involves students to predict their hypotheses, observe directly, and compare observations with what they have previously predicted (Nana, 2022). The POE learning model is a learning model developed to see the ability of students to predict something and the reason why the prediction is made (Utama et al., 2019). This POE model has 3 learning steps, namely (1) Predicting, at this stage students are asked to make predictions of an event from what the teacher has explained in front of the class with freedom of initial knowledge, (2) Observing, at this stage students conduct experiments to prove the truth of predictions that have been made before, (3) Explain, in the last stage students discuss what has been predicted and observed with group mates, then summarize and present the results of their observations in front of the class (Aida et al., 2019).

In the POE learning model there are 3 syntax, which are as follows: (1) Prediction, is an activity that makes interpretations of an event in physics learning, (2) Observation, is an activity where students do practicum or experiments to blind the conjecture or truth of the observations they have made, (3) Explanation, is an activity to explain the interpretation of predictions that have been made by observing whether there are similarities between the two (Restami, 2019). Learning models have Benefits. The following are the benefits of the Predict, Observe and Explain (POE) learning model as follows (1) Can explore the initial knowledge that students have from the beginning of prediction, (2) Can provide information for teachers about student understanding, (3) Can make good discussions between students and teachers, (4) Can provide motivation for students about the results of their experiments, (5) Can foster students' curiosity in their experiments (Nugraha et al., 2019).

In Predict, Observe and Explain (POE) learning, there are advantages where students can be directly involved in comparing hypotheses that have been done previously with research results, through observations that have been made by students to test the truth of research, and students can actively and creatively be directly involved in the learning process not only monotonous but also develop students' potential to do more active learning. In the POE learning model, there are also shortcomings that are owned when conducting research or observation, namely requiring adequate tools and materials, requiring more mature preparation and in a longer period of time, and students must require careful ability to conduct experiments, in this case also teachers must also be led to be directly involved creatively and have a good ability to motivate students to conduct experiments (Delita et al., 2021).

Motivation is a condition from within a person who wants to do something in achieving the goals to be achieved (Arianti, 2018). Motivation can also be interpreted as an existing drive to stimulate from within the individual and outside to make someone want to change behavior or activities for the better (Rumbewas et al., 2018). In this case, there are three functions of learning motivation that can be used as a reference for students in the learning process, namely (1) Encouraging someone to do, or as a driver of every activity done, (2) Finding the direction of change in oneself, namely in a direction that is in accordance with its purpose, (3) Completing actions, namely determining what actions should and should not be done (Sardiman, 2020). In addition, there are several indicators of learning motivation, which are as follows: (1) There is a desire to succeed, (2) There is an urge to study hard, (3) There are great hopes and aspirations, (4) There are awards/achievements, (5) There are interesting activities during learning, (6) There are environmental conditions that are conducive to learning (Mu'aziyah & Isnawati 2023;

Syachtiyani & Trisnawati, 2021).

There are several factors that can influence students to get good learning motivation, namely (1) The first factor, can create conditions for an effective learning process which in this condition is appropriate and can support continuity during learning, (2) The second factor that can affect motivation in learning is a physical condition where when the teacher explains students easily experience boredom and do not focus on learning. During learning the condition of the body is very important because it can influence the five senses to receive the response given from the teacher who explains in front, (3) The third factor is the level of intelligence of students who do not have motivation from themselves or the surrounding environment, (4) The fourth factor that influences is inadequate facilities and infrastructure from the school so that it makes students lazy in the learning process. (5) The fifth factor is the teacher where the teacher is the main key when learning takes place. Good classroom management will result in students being more productive and active, (6) The sixth factor is the surrounding environment, be it parents, friends who affect learning motivation to increase student morale (Rohman & Karimah, 2018).

Based on the results of pre-research at SMA Negeri 2 Lubuklinggau on January 5, 2023, it was found that the learning process in schools only uses lecture or conventional methods, which causes students to become passive and has an impact on students' lack of motivation to learn. Low student motivation is caused by a learning process that is not student-centered or where the learning carried out is not student-centered to build their own knowledge. This can also be proven when student interviews reveal the learning process of taking more notes and listening to teachers, it can be concluded that students are still lacking in motivation from inside and outside the school environment.

METHOD

The method used in this study is an experimental method, where students carry out practicum activities guided by the teacher by demonstrating practicum trials and classroom learning. Continued with students who individually or in groups demonstrate practicum activities in physics learning. After practicum activities are carried out, students can conclude each activity from learning physics through the results of experiments that have been carried out. This research was conducted at SMA Negeri 2 Lubuklinggau from February 7 to March 7, 2023 even with the population in this study being students of SMA Negeri 2 Lubuklinggau class X in the 2022/2023 Academic Year which amounted to 360 students. Based on the population, sampling is carried out in class X IPA 2 using the Simple Random Sampling technique because the sample is a randomly taken population. Some indicators of learning motivation are as follows: (1) There is a desire to succeed, (2) There is an urge to study hard, (3) There are great hopes and aspirations, (4) There are rewards/achievements, (5) There are interesting activities during learning, (6) There are conducive environmental conditions for learning (Syachtiyani & Trisnawati, 2021). The instrument used is a student learning motivation questionnaire. With data analysis in the form of motivational questionnaire data analysis techniques. It can be seen in the formula (Nirfayanti & Nurbaeti, 2019).

$$P = \frac{\sum x}{N} 100\%$$

Remarks :

P : Percentage

$\sum x$: Frequency searched percentage

N : Total score of each aspect

To see the categories of learning motivation questionnaires can be seen in Table 1.

Table 1. Learning Motivation Questionnaire Category

The Value of Student Response	Category
$75\% \leq \text{Presentase} \leq 100\%$	Excellent
$50\% \leq \text{Presentase} < 75\%$	Good
$25\% \leq \text{Presentase} < 50\%$	Less
$0\% \leq \text{Presentase} < 25\%$	Very Lacking

Sumber: (Nirfayanti & Nurbaeti, 2019)

RESULTS AND DISCUSSIONS

Data from this study was obtained through student motivation questionnaires given to respondents. The results of the student motivation questionnaire were assessed using 4 likert scales, namely agree, agree, disagree, strongly disagree with 12 motivational indicators in the form of questions / statements. This questionnaire is given after the end of the learning process. From the categories and analysis of student motivation questionnaire data calculations, the following is data on student learning motivation results which can be seen in table 2.

Table 2. Student Learning Motivation Analysis Data

Class	Percentage of Learning Motivation Criteria (%)			
	Excellent (%)	Good (%)	Less (%)	Very Lacking (%)
X IPA 2	94%	6%	0%	0%

Based on Table 2. It is known that class X IPA 2 with a total of 35 students has excellent and good motivation. This data is calculated per each student's answer from the questionnaire given and then analyzed using the answer formula, then the average answer results are divided by the number of students who fill out the questionnaire. The high motivation to learn makes students happier and able to capture the learning provided by the teacher. Figure 1 shows the data from the analysis of student learning motivation.



Fig 1. Percentage of Learning Motivation for Class X IPA 2

Figure 1 shows that the learning motivation of grade X IPA 2 students is divided into 2 criteria, namely, very good and good. As many as 94% of students have excellent motivation, and 6% of students have good learning motivation.

Based on hypothesis testing that has been done, POE learning motivates students to try to understand the material through experimental activities. In addition, at the observe stage students are more enthusiastic because they can develop knowledge and skills with couples and groups with full willingness, and active and skilled participation. During learning students look enthusiastic, this indicates that students have been motivated in the learning carried out. Student learning motivation is also seen when students conduct experimental activities and do questions given by the teacher. Even with a long learning time, students remain active and enthusiastic in learning. Thus, it can be seen that students have

high motivation in learning physics. In line with research conducted by (Desi et al., 2023; Aida et al., 2019) the POE learning model is a model based on constructivism theory, which is through 3 activities including predicting, observing, and explaining the results of observations or experiments that have been carried out by students to foster student willingness in the learning process. So that in this case this model can understand the concept and its application through fun experimental activities in the laboratory and outdoors.

CONCLUSION AND SUGGESTION

Based on the results of the research obtained, it can be concluded that after the implementation of POE learning students have high motivation to do physics learning. This can be seen in the criteria that have been tested where the table shows very good and good data analysis. Based on the conclusions that have been obtained from the results of research and discussions that have been explained, the researcher suggests that the Predict, Observe and Explain (POE) learning model can be used as an alternative for the physics learning process. And researchers should conduct the same research on different materials, times and places to improve the quality of education by paying more attention to the role of teachers in directing students in the learning process. This is evidenced when students carry out learning activities they are happier and active in conducting experimental activities. Physics subject matter teachers also revealed that for physics learning, because using formulas and calculations students are more inclined to experiments whose grades or abilities are quite high.

ACKNOWLEDGMENTS

The author expresses his gratitude to PGRI Silampari University for supporting the implementation of the research "Analysis of Student Learning Motivation through the Predict, Observe, Explain (POE) Learning Model"

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