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THE EFFECT OF *THE PROBLEM BASED LEARNING* MODEL ON STUDENT LEARNING OUTCOMES IN ECONOMICS SUBJECTS AT SMA NEGERI 2 INDRALAYA UTARA

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ABSTRACT

This study aims to prove the influence of the Problem Based Learning model on students' learning outcomes in economics subjects at SMA Negeri 2 Indralaya Utara. Quantitative research methods of experimental type with quasi-experimental research methods. The population in this study is class XI of SMA Negeri 2 Indralaya Utara even semester of the 2024/2025 academic year. The research sample of class XI.2 totaling 25 students using the Cluster Sampling technique. The data collection techniques used are tests and observations. The test is used to obtain learning outcome data and observation data obtained from observation results during the treatment of the Problem Based Learning model during the learning process. The hypothesis test was carried out using a paired sample t-test showing that tcount = 6.137 ≥ ttable = 1.710 meaning that Ho was rejected and Ha was accepted so that it can be concluded that there is an influence of the Problem Based Learning model on the learning outcomes of students in economics subjects at SMA Negeri 2 Indralaya Utara. It is recommended that students can better understand and improve learning outcomes, so that the results obtained can be increased through active learning.

Keywords: *Problem Based Learning,* Learning Outcomes

INTRODUCTION

The rapid development of technology and information has brought great changes in the world of education. To answer the challenges of the 21st century, education is required to be able to adapt and create learning that is not only oriented to knowledge transfer, but also forms active, critical, and independent learners. This requires educators to develop learning strategies that are innovative and responsive to the needs of students. In line with that, Sulaiman et al. (2024) stated that the learning model must be able to accommodate the planning, implementation, and evaluation of learning in a structured manner so that the learning process is more effective and meaningful.

One of the approaches that is considered to be able to answer these challenges is *Problem Based Learning* (PBL). Setyo (2020) stated that PBL is a learning model that focuses on solving real problems, which is designed to improve students' critical thinking skills and problem-solving skills. This is reinforced by Minarti et al. (2023) who explain that PBL invites students to analyze and evaluate complex problems collaboratively, resulting in solutions based on deep understanding. Thus, PBL not only develops students' cognition, but also fosters social skills and learning independence.

In the context of economic learning, learning outcomes are an important indicator that reflects the success of students in understanding the material. Susanto (2014) defines learning outcomes as behavioral changes in the form of knowledge, skills, and attitudes acquired by students after the learning process. Sitompul (2022) added that learning outcomes include cognitive, affective, and psychomotor abilities as a result of learning experiences, not just potential abilities. Therefore, the right learning strategy is very necessary to encourage the achievement of optimal learning outcomes, especially in economics subjects that require an understanding of concepts and

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applications in daily life.

The Merdeka Curriculum provides space for educators to implement differentiated learning and oriented towards developing students' potential. Warnius & Bilo (2024) emphasized the importance of a learning approach that pays attention to the differences in students' learning styles, and is able to facilitate creativity and critical thinking. In this context, PBL is considered relevant because it is able to encourage students to understand economic concepts applicatively through contextual problem solving, as well as strengthen their social and cognitive skills.

The results of initial observations conducted at SMA Negeri 2 Indralaya Utara show that most of the students of class XI have difficulties in achieving maximum economic learning outcomes. Based on daily test data, the majority of students obtained scores in the sufficient category. In addition, the learning process is still dominated by lecture methods that make students less active and less motivated. This is in line with the findings of Sri Mimarti, S.Pd., as an economics teacher, who stated that students tend to be passive, lack focus, and do not show enthusiasm in the learning process.

Conventional learning methods such as lectures and questions and answers that have been used so far are considered less effective in encouraging student learning activity. In fact, one of the important principles in learning is the active involvement of students in the process of building understanding. Therefore, the application of a more interactive and contextual learning model is needed. One of them is PBL, which allows students to learn through problem-solving experiences that are directly related to the subject matter.

Various previous studies have proven that PBL has a positive impact on improving learning outcomes. Research by Nusi et al. (2024) shows that the implementation of PBL is able to increase the enthusiasm and activeness of students in social studies subjects. Similar findings were also conveyed by Mukhnazam & Raharja (2025) and Ningsih et al. (2024), who found that PBL has a significant impact on improving the understanding and achievement of students' learning outcomes at various levels and subjects. This evidence reinforces the suspicion that PBL can be an effective strategy in learning economics at the high school level.

Based on this background, this study aims to examine the effectiveness of the *Problem Based Learning* model in improving the economic learning outcomes of students in high school. Through this research, it is hoped that alternative learning approaches can be found that are able to create a more fun, active, and positive learning environment for the achievement of student learning outcomes.

RESEARCH METHODS

This study uses the *Pre-Experimental Design model* research in the form of *One Group Pretest-Posttest Design* with a quantitative approach. The population in this study is class XI Social Studies at SMA Negeri 2 Indralaya Utara which consists of 73 students. The sample was determined using *a cluster sampling* technique by taking class XI.2 which amounted to 25 students who would be given treatment. In this study, data was collected using observation and tests. Observations used a likert scale of 1-5 to see the application of the PBL model during treatment. Then the test was carried out to measure the learning outcomes of students before and after treatment. The test is given in the form of multiple-choice questions totaling 36 questions. The research data analysis technique begins with analyzing the test. Then the prerequisite test is the normality test using *Chi Square*. Then test the

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hypothesis using *a paired sample t-test* to see and prove the influence of the PBL model on the learning outcomes of students at SMAN 2 Indralaya Utara.

RESULTS OF RESEARCH AND DISCUSSION

Before the test instrument is used in the research, a validity and reliability test is first carried out to ensure that the tool is feasible and reliable in measuring student learning outcomes. The validity of experts and external experts was obtained through an assessment from an expert, namely Mrs. Dian Eka Amrina, S.Pd., M.Pd. before the number of question items was validated as many as 40 questions and tested on a population that was not included in the sample so that 36 valid questions were obtained which would be given to the sample during treatment. Furthermore, the reliability of the instrument was tested using the KR-20 formula (*Richardson Quartet*) and a coefficient value of 0.83 was obtained, which is classified as very high. These results show that the instrument has good internal consistency and can be used validly in measuring student learning outcomes after the application of the *Problem Based Learning model*.

Table 1. Reliability Test Results

Instruments	Calculation	rtable	Category
Test	0,897	0,70	Very high

(Source: Researcher Data, processed May 2025)

Test Data Analysis (*Pre-test*)

Before the model treatment *Problem Based Learning* to students, namely carried out *Pre-test* First. The results of the test analysis showed an average score of 42% which was in the poor category.

Table 2. Test Data Analysis Results (*Pre-test*)

Greatest value	Smallest value	Average	Category
92%	17%	42%	Less good

(Source: Researcher Data, processed May 2025)

Test Data Analysis (*Post-test*)

After being given 3 treatments, there were 3 meetings with the application of the *Problem Based Learning*, then given a test again as *post-test,* where an average result of 78% was obtained which is in the good category.

Table 3. Test Data Analysis Results (*Post-test*)

Greatest value	Smallest value	Average	Category
94%	53%	78%	Good

(Source: Researcher Data, processed May 2025)

Based on the results of the analysis of *pretest* and *posttest* test data, student learning outcomes have increased significantly, where the previous average of 42% has increased to 78%. This proves that the *Problem Based Learning model* has proven to be effective in improving student learning outcomes.

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Furthermore, prerequisite and hypothesis tests are carried out to prove the correctness of the hypothesis that has been made. The prerequisite test carried out was a normality test using *Chi Square.*

Data Normality Test

Table 4. Data Normality Test Results

Test	Xutung	XTable	Category
Pre-test	4,7015	36,415	Usual
Post-test	21,4119	36,415	Usual

(Source: Researcher Data, processed May 2025)

From the table above, it shows that the results of *the pretest* and *posttest* tests obtained a value smaller than $X_{table.}$ So that the twotest data are distributed normally, which means that they are eligible for the next test, namely the hypothesis test using *the paired sample t-test.*

Uji Hypothesis

This test is carried out to see and prove whether the model *Problem Based Learning* effective in improving student learning outcomes.

Table 5. Hypothesis Test Results

Variabel	Stuttgart	Table	Conclusion
Learning Outcomes	6,137	1,711	Influential

(Source: Researcher Data, processed May 2025)

The results of the t-test show that the *Problem Based Learning* model has proven to be effective in improving student learning outcomes. This is shown by the result of $t_{calculation}$ = 6.137 greater than the result of t_{table} = 1.711 which means that H_o is rejected and H_a is accepted so that it can be concluded that there is an influence of the *Problem Based Learning* model on the learning outcomes of students in economics subjects at SMA Negeri 2 Indralaya Utara.

The application of *the Problem Based Learning* (PBL) model has been proven to have a positive influence on improving student learning outcomes in economics subjects. This approach places students as active subjects in learning, where they are invited to solve problems that are directly related to real life. According to Dini (2024), the PBL model is very effective in encouraging students to develop concept understanding, critical thinking skills, and the ability to work together in groups.

Before the PBL model was implemented, the average score of students only reached 42%, with the highest score of 92% and the lowest score of 17%. This low achievement reflects the limitations of students in understanding the material as a whole. This can be caused by the use of lecture methods that still dominate the learning process, where students receive more information passively without active involvement in building understanding.

This is in line with a study conducted by (Ernawati, 2022) which emphasizes the importance of learning that actively involves students so that the learning process becomes more meaningful. In addition, according to Khoerunnisa & Aqwal (2020), students' activeness in learning can improve their understanding of the material. This is also strengthened by the views of Fadholi et al. (2024)

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who explain that PBL provides space for students to develop their own knowledge, while educators play the role of facilitators who guide the thinking process. After the implementation of the PBL model, there was a significant increase in learning outcomes. Average score *posttest* rose to 78%, with a high score of 94% and a low score of 53%. This improvement shows that the PBL approach is able to help students understand the material more deeply through solving problems that are real and relevant to their lives. This increase is in line with the results of research by Ariyani & Kristin (2021), which found that PBL was able to significantly improve student learning outcomes by up to 83.3%, with an average increase of 30%.

Based on the results of observations, the implementation of PBL-based learning in the classroom reached 92%, which is classified as very good. All stages of PBL, starting from giving problems, group discussions, to presentation of results, can be carried out smoothly and according to procedures. This shows that this model is very possible to be applied effectively in the school environment and can create a more lively, active, and collaborative learning atmosphere. In addition to having an impact on improving learning outcomes, the implementation of PBL also has an influence on students' thinking skills. They not only learn to understand theory, but are also trained to relate matter to the phenomena that occur around them. According to Ningrum et al. (2025), PBL provides an immersive learning experience because it places learners in challenging and relevant learning situations, which ultimately improves understanding and higher-level thinking skills. This study is also in line with the findings of Nusi et al. (2024) which show that the PBL model contributes 53.7% to improving learning outcomes in Integrated Social Studies learning. This finding corroborates that the higher the ability of students to solve problems, the higher the learning outcomes that can be achieved. This means that PBL is one of the effective approaches in encouraging better academic achievement. In addition, the results of this study are also in line with studies conducted by Mukhnazam & Raharja (2025) and Ningsih et al. (2024), which concluded that the use of the PBL model is able to significantly increase students' interest, activeness, and understanding. Learners' involvement in the learning process encourages them to not only understand concepts theoretically, but also to apply them in a variety of real-life situations they face. Thus, this PBL model has proven to be effective in improving students' economic learning outcomes.

CONCLUSION

The application of the *Problem Based Learning* (PBL) model has improved the economic learning outcomes of students in class XI of Social Studies High School Negeri 2 North Indralaya. This is based on the results of the data study and previous discussion with a calculated t-value of 6.137 higher than the table t-value of 1.711, so that Ha is accepted and Ho is rejected. Because the value $t_{is\ calculated} \geq t_{table}$, then Ha is accepted. Furthermore, the PBL learning model has an influence on student learning outcomes, which is shown by an increase in the average result before the implementation of 42% and after the treatment, namely the *Problem Based Learning model, the* average increase to 78%. Thus, the researcher suggests that students are expected to be more active in learning and more serious in understanding each material studied, so that the learning outcomes can continue to develop optimally.

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