



Improving Physics Learning Activities and Outcomes Using the *Problem-Based Learning Model Assisted by Blooket Media* in High School Students

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Abstract

The activities and learning outcomes of physics students in class X of high school are still relatively low due to the lack of student involvement and the use of interesting learning modes. The Problem-Based Learning (PBL) learning model, based on problem solving, if supported by interactive media such as Blooket, will have the potential to increase student participation and understanding. This study aims to describe the improvement of students' physics learning activities and outcomes using the Problem-Based Learning (PBL) learning model assisted by Blooket media at SMA Negeri 5 Jember. The respondents in this study were students in class X 5 at SMA Negeri 5 Jember. This research uses Classroom Action Research (PTK), which is carried out in two cycles. In this case, each cycle consists of four stages, namely planning, implementation, observation, and reflection. The results of cycle I are used as a benchmark for the implementation of cycle II. Where the implementation of cycle II was carried out to overcome the weaknesses that existed in cycle I. The results of the study showed that the use of the Problem-Based Learning (PBL) learning model assisted by Blooket media experienced an increase in learning outcomes from cycle I to cycle II by 0.53 to 0.73. Then, in the analysis of learning activities in cycle I to cycle II, the percentage increased from the active category to very active, with an average of cycle I of 74.58% and cycle II of 91.67%. Therefore, it can be concluded that the use of the Problem-Based Learning (PBL) learning model assisted by Blooket media can improve students' physics learning activities and outcomes.

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INTRODUCTION

Education in the 21st century plays an important role in shaping character and improving the quality of life, especially because of technological advances that change the way we learn and broaden horizons [1]. Technology also allows education to be disseminated faster through various learning media [2]. Efforts to improve the quality of education in Indonesia require a learning model that utilizes technology-based media. The quality of education in Indonesia has improved with the implementation of an independent curriculum that focuses more on making students the center of learning [3]. The obstacles and challenges in carrying out interactive learning between students and teachers will depend on how the learning process goes. In learning, teachers are required to determine the right learning method and master the material, especially in education in the field of physics [4]. The learning process in the classroom requires an activity, because without learning activities, it will not run effectively. Effective learning activities occur when students actively process and respond to information from teachers, and these activities are important for learning outcomes. Students who

are active in the classroom can be recognized by the various activities that they do [5]. Lack of student activity is often the cause of low learning outcomes, especially in physics lessons [6].

The learning problems in the classroom are seen by the students. When the researcher made an initial observation during teaching assistance at SMAN 5 Jember, the dominant learning model used by educators was the PBL learning model. However, student activities tend to be passive, as evidenced when teachers provide material in class, students just sit still, daydream, and are often bored with physics lessons, but enthusiastically ask questions to the teacher during physics learning in class. This is in accordance with the opinion of the teachers of SMAN 5 Jember, who stated the lack of interactive media. Based on the results of observations, supported by interviews with physics teachers in class X5, it was said that many students tended to play with their classmates, did not pay attention to the teacher, and many students worked on problems carelessly in answering questions given independently or in groups. These problems prove that declining student activity will be the learning outcomes of students in class X5 will also be low. This is shown by the average score of students' daily physics test results of 68.05, which shows that the score has not reached the KKM of 75. As many as 36 students, only 37% managed to achieve KKM [7]. Students' physics learning outcomes are low because students do not really like boring physics learning. Thus, student activities and learning outcomes are still relatively low.

Furthermore, how to improve the teaching and learning process in the classroom and overcome existing challenges is to use an innovative learning model based on problem solving, namely PBL. The PBL model is a learning approach that invites students to be directly involved in overcoming a *Problem* using scientific measures, so that, in addition to gaining an understanding of the material, students also improve their abilities [8]. The PBL learning model is often applied in the Independent Curriculum, where students look for relevant problems in their environment. After that, the teacher motivates students to be active in solving the problem [9]. The teaching model in the PBL learning model relies on real problems as background. This approach can guide students to be able to hone analytical thinking skills, solve problems, and gain knowledge [10]. However, this PBL model has not been able to attract students to overcome a *Problem*, for students who are not interested will experience difficulties and make students less active in learning activities [11]. Thus, the learning model, *Problem-Based Learning* This can be supported by educational media. The interactive media-based PBL learning model for students can greatly support cognitive learning outcomes [12]. Innovative technology-based learning enables student For the spirit of learning, one of them is the media *Blooket*. This media is the latest interactive learning platform launched in 2020 in the form of a web and contains quizzes [13]. Media *Blooket* These are many games in the form of games that can be implemented during teaching and learning activities. In addition, this media can also be accessed anywhere and anytime [14].

Research on media-assisted PBL learning model *Blooket* In physics learning, has been carried out in previous studies in physics learning. Research results [15] show that learning outcomes have improved using the PBL model. Findings [16], the results show a positive response to *Blooket*. This shows that the media *Blooket* in schools is suitable for use in the implementation of teaching and learning. [17], It was found that the learning model *Problem-Based Learning* using the Culturally Responsive Teaching (CRT) approach, with the help of evaluation tools *Blooket* can maximize student learning outcomes. Based on the problems that have been presented, further research is needed to examine the media-assisted PBL learning model *Blooket* can improve students' physics activities and learning outcomes. Previous research has shown that the use of media *Blooket* feasible and can maximize student learning outcomes. Therefore, this research was carried out with the aim of improving physics learning activities and outcomes using the learning model *Problem Based Learning* (PBL) assisted by *blooket* media for grade X 5 students at SMA Negeri 5 Jember. Research issues include increased physics activities and learning outcomes. Thus, this study is directed to describe the improvement of physics activities and learning outcomes of grade X 5 students at SMAN 5 Jember using media *Blooket*.

RESEARCH METHODS

The research was conducted at SMAN 5 Jember, especially class X5, in the 2024/2025 academic year in odd semesters. The type of research used is PTK, according to the desired objectives. Classroom Action Research is a study that functions in developing personal work experience and developing oneself with a systematic, planned, and reflective approach [18]. The design of this study adapts to the model used by Kemmis and Mc. Taggart, which includes four components in the cycle: planning, implementation, observation, and reflection. The stages in this research cycle can be observed in Figure 1 below:

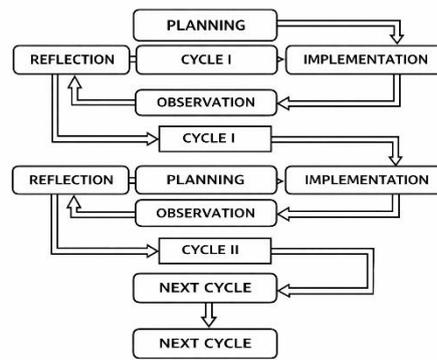


Figure 1. PTK Cycle Model Kemmis and MC.Taggart Muslich (2011)

Stages of learning in cycle I

1) Planning

Planning is the first step or preparation step where the researcher makes preparations, such as creating learning media, compiling learning modules, making test questions, and other learning tools that need to be prepared before carrying out classroom action research. The preparations carried out by the researcher in the planning phase are:

- a. Prepare learning tools such as teaching modules, LKPD, test questions, observation sheets, interview sheets, and determine several observers.
- b. Provide and prepare *Blooket* media with global warming materials.
- c. Establish criteria for the success of learning improvement. Learning improvement is said to be successful if 75% of the students in grade X 5 can show physics learning results above the KKM.

2) Acting

The implementation is the presentation of teaching materials that are adjusted to the modules that have been made to optimize physics learning activities and learning outcomes with the help of *blooket media*. The implementation stages include:

- a. The researcher conducts learning in accordance with the planning that has been made in the first cycle.
- b. The researcher conducts a reflection, and the results are used to improve learning in the next cycle.

3) Observing

Observation is the stage of data collection carried out by researchers where there are teachers together with observers in the classroom, who then observe and document learning activities in the classroom. The data collection technique was carried out through interviews, learning outcome tests in the form of five essay questions, and observation activities carried out using observation sheets, including student observation sheets and teacher observation sheets. This is an indicator observed in learning activities, namely visual activities, oral activities, listening activities, writing activities, and mental activities.

4) Refleksi (*Reflecting*)

Reflection is carried out by reviewing the entire series of learning actions based on the results of observation and evaluation when the learning process is carried out. The purpose of this reflection is to achieve student learning outcomes. The reflection stage includes the activities of analysis, synthesis, interpretation, explanation, and conclusion. As well as looking at the results of *the pretest, Posttest*, and reviewing the results of observers. The results of this reflection are used as a basis for implementing the next action, namely, whether or not it is necessary to carry out the second cycle. If in the first cycle the expected result has been achieved, namely the achievement of classical completeness, then the implementation of the cycle is stopped. The completion in question is if 75% of the 36 students get a final score of 75 out of a maximum score of 100. However, if the expected results are not fully realized, then it can be applied in the second cycle in the implementation of correcting the shortcomings that existed in the first cycle, as a consolidation of the research.

$$N_A \geq$$

Stages of the learning cycle II

Cycle II is the implementation of improvements to shortcomings in Cycle I. The stages in cycle II include planning, implementation, observation, and reflection.

1. Planning

Cycle II was carried out by researchers with the beginning of improvements in planning in the form of the preparation of learning tools such as teaching modules, LKPD, observation sheets, test question sheets, determining several observers and interview sheets knowing that cycle I had not been achieved, so it was carried out again in cycle II.

2. Implementation

The implementation is the presentation of teaching materials that are adjusted to modules that have been made with the aim of developing physics learning activities and outcomes with the help of *blooket media*. The implementation stages include:

- a. The researcher conducted learning according to the planning that had been made in cycle II.
- b. The researcher conducts a reflection, and the results are used to improve learning in the next cycle.

3. Observation

Observation is the stage of data collection carried out by researchers where there are teachers together with observers in the classroom, who then observe and document learning activities during improvements in the classroom. The data collection technique was carried out through interviews, learning outcome tests consisting of five essay questions, and observation activities carried out using observation sheets, including student observation sheets and teacher observation sheets. The observation of learning activities includes visual activities, oral activities, listening activities, writing activities, and mental activities.

4. Reflection

Reflection includes the activities of analyzing, synthesizing, interpreting, explaining, and making conclusions. Based on this, this reflection activity is a test analysis, observation results, and evaluation to find out about model optimization in learning after cycle I has met the learning objectives or not. So this second cycle will be improved again.

The use of *Blooket media* in this study uses expert judgment. Then the data collection technique was analyzed using SPSS 26, and this study used a number of instruments in obtaining data, such as interviews with physics teachers, learning documentation, observation of student activities, and the provision of student learning outcome tests. The data analysis technique in classroom action research uses qualitative descriptive analysis with certain formulas and rules as follows:

- a) Analysis of the increase in physics learning activities

Student activity during learning activities can be observed using observation sheets that include direct observation of the implementation of teaching and learning in the classroom. So those used on the observation sheet are given with a score with a range of 1 – 4 that has been prepared in advance. The number of scores obtained by adding the value of each indicator in its percussion. The increase in student learning activities can be measured using equation 1 as follows:

$$Student\ Grades = \frac{Score\ Obtained}{Maximum\ Score} \times 100\% \tag{1}$$

[19]

Criteria for assessing student learning activities

Table 1. Criteria for assessing student learning activities

Percentage Interval (%)	Category
$80 < 100 \leq P$	Highly Active
$60 \leq P < 80$	Active
$40 < 60 \leq P$	Quite Active
$20 < 40 \leq P$	Less Active
$0 \leq P < 20$	Inactive

(1)
[20]

- b) Analysis of improving physics learning outcomes

Learning outcomes refer to the scores obtained from *the pretest* that is carried out before the physics learning and *the posttest* that is carried out afterwards. The data analysis uses qualitative descriptive analysis and equations (2) of N-Gain analysis as follows:

$$N - Gain = \frac{Skor\ Posttest - Skor\ Prettest}{Skor\ Maksimum - Prettest} \times 100\% \tag{2}$$

[21]

Thus, the results were analyzed using the score criteria shown in Table 2 below:

Percentage Interval (%)	Category
$N - Gain \geq 0,70$	Tall
$0,30 \leq N - Gain < 0,70$	Keep
$N - Gain < 0,30$	Low

(2) [22]

- c) Analysis of the results of physics learning completeness

Learning completeness can be analyzed through the learning outcomes obtained by students. So, in knowing and determining how far the optimization of physics learning outcomes has been obtained by students.

The determination of the completeness of students to achieve the KKM (Minimum Completeness Criteria) 75 set in the \geq calculation uses equation (3) to facilitate the analysis as follows:

$$P_{Classical} = \frac{\text{Number of Students Who Completed}}{\text{Total Number of Students}} \times 100\% \quad (3)$$

[23]

RESULTS AND DISCUSSION

The implementation of this research took place during the even semester of the 2024/2025 academic year, precisely from March 7 to May 9, 2025. The subjects in the study involved 36 students of class X 5 at SMAN 5 Jember, consisting of 18 female students and 18 male students. This activity was carried out after obtaining the approval of the principal and physics teachers. Three colleagues help as observers, while physics teachers accompany the learning process and assist in the preparation of modules and teaching materials. The research was carried out in two cycles, namely cycle I and cycle II. Each cycle includes four phases: planning, execution, observation, and reflection. Data were obtained by documentation, observation, interviews, and physics learning outcome tests.

The use of Blooket's media-assisted PBL learning model to improve students' physics learning activities

This research aims to increase student learning activity, especially physics, through the application of the PBL model supported by *Blooket media* in grade X 5 students of SMAN 5 Jember. Before the implementation of the PBL model with the help of *Blooket*, students tended to be less active in participating in the implementation of teaching and learning. They even listened to the teacher a lot without participating in discussions or asking questions. In general, student engagement in learning is still low. Referring to the results of the data on student physics learning activity in cycle I presented in Figure 2, it is known that the average percentage is 74.58% with the active category.

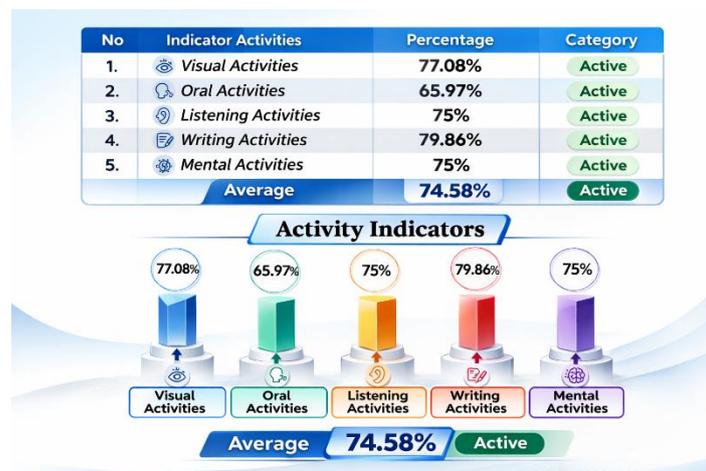


Figure 2. Average Percentage of Physics Learning Activities in Cycle I from the Three Observers

Based on the results of the observation of the first cycle, all indicators of student learning activities, including *Visual Activities*, *Oral Activities*, *Listening Activities*, *Writing Activities*, and *Mental Activities*, are included in the active category. However, there are still several obstacles, such as a lack of confidence, students who are not focused, and a lack of attention to the provision of material by teachers. But in general, students can already show good participation in the implementation of teaching and learning and have abilities that can be improved in cycle II.

In cycle II, the average student's physics learning increased by 91.67%, which is classified as the most active category, which can be seen in Table 3. The increase in physics learning activities in this indicator is influenced by several improvements implemented in this second cycle of learning such as teachers providing clear guidance on what students need to write during learning, the application of a model that can motivate students to record and write the results of group discussions, the provision of structured written assignments and variations, so that students can be more involved in expressing their understanding in writing, and the habit to write during the learning process where not only when given special assignments.

Table 3. Average Percentage of Physics Learning Activities in Cycle II from the Three Observers

No	Indicator Activities	Percentage	Category
1.	Visual Activities	93.06%	Very Active
2.	Oral Activities	86.11%	Very Active
3.	Listening Activities	90.97%	Very Active
4.	Writing Activities	94.44%	Very Active
5.	Mental Activities	93.75%	Very Active
Average		91.67%	Very Active

In this second cycle of learning, the researcher gave encouragement or verbal direction to students who were not right in responding to the questions shared by educators. So, according to the theory [24], which states that the Students' physics learning includes both verbal and non-verbal activities. Therefore, teachers guide students to use suitable learning models and media so that they can make students more enthusiastic and active in learning physics. The PBL model helps students think critically to solve *problems* related to life. Meanwhile, Blooket media strengthens the application of PBL because it is interactive and interesting, so that it can motivate students to participate and be active in teaching and learning activities, is fun, competitive, and can facilitate students to remember the material taught, and can also be accessed online easily. In line with research [25], which states that the media *Blooket* can increase students' physics learning activities. The recapitulation of the results of the physics learning activity research is shown in the following table 4:

Table 4. Recapitulation of Research Results of Learning Activities

Action	Learning Activities	Percentage	Category
Cycle I	Learning Activities	74.58%	Active
Cycle II	Learning Activities	91.67%	Very Active

The table shows that there is an increase. In the first cycle, learning activities reached 74.58% in the active category, and then improvements were made in the second cycle, which increased by 91.67%. This increase occurred due to verbal and nonverbal support. Students show a high sense of optimism when expressing ideas and can solve problems well. Thus, student learning activities in the second cycle are classified as very dynamic. This can be seen in the following figure 3:

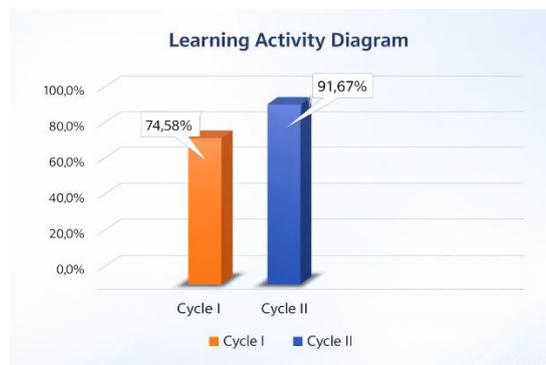


Figure 3. Learning Activity Recapitulation Diagram

Based on the results of observations, the implementation of the PBL learning model supported by *Blooket media* has been proven to be able to optimize students' physics learning activities and outcomes. The PBL model helps students think critically to solve real-life *problems*. Meanwhile, Blooket media strengthens the application of PBL because it is interactive and interesting, so that it can motivate students to participate and be active in teaching and learning activities, is fun, competitive, and can facilitate students to remember the material taught, and can also be accessed online easily. In line with research [26], which states that *Blooket media* can increase students' physics learning activities. The results of interviews with physics teachers in class X 5 show that the implementation of the PBL model assisted by *Blooket media* is able to optimize student involvement during the learning process. Students began to actively discuss, listen to material explanations, and dare to express their opinions. In general, the application of Blooket-based PBL has proven to be effective in optimizing physics learning activities and outcomes. This finding is in accordance with research [27] and [28], which proves that the PBL model assisted by *Blooket media* can increase activities and student learning outcomes are effective.

Implementation of the PBL learning model assisted by *Blooket media* in improving physics learning outcomes

This study intends to optimize the learning outcomes of physics in grade X 5 students at SMA Negeri 5 Jember using the PBL model assisted by *Blooket* media. Based on the test results obtained through *the pretest* and *posttest*, each cycle experiences progress in learning physics for students. Learning outcomes were analyzed using N-Gain to measure the activeness of using the PBL learning model assisted by *Blooket media* in each cycle. With this, students are declared complete by exceeding the KKM score of 75 in the physics subject. The results of student physics learning in the first cycle, the results of *the Pretest* of global warming materials in table 5, were presented by 8 students with a percentage result of 22.22% declared complete. Then, after being given the final test, namely the *Posttest*, the number of students who completed it increased to 22, and they obtained a percentage result of 61.11%.

Table 5. Recapitulation of the Completeness Value of Physics Learning Outcomes Cycle I

Stage	Mastery Status	Frequency	Percentage	Average
Pretest	Completed	8	22.22%	54.78
	Not Completed	28	77.78%	
Posttest	Completed	22	61.11%	78.83
	Not Completed	14	38.89%	

From the table, it can be seen that in the first cycle, as many as 8 students managed to achieve a *complete Pretest* score, while 28 students have not completed it, because the average score obtained is 54.78. After *the Posttest*, the number of students who completed increased by 22, and 14 students did not complete; the average score increased to 78.83. These results are shown in the graph in the following figure 3:

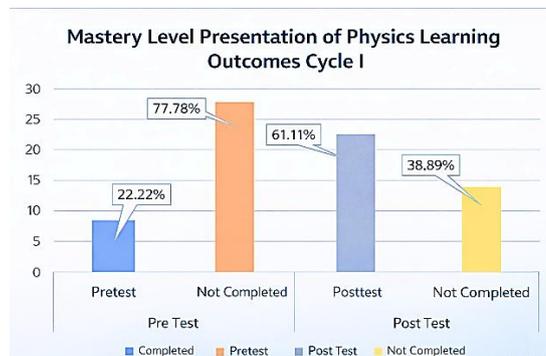


Figure 3. Graph of the average level of completeness of learning outcomes in cycle I

The data on physics learning outcomes were obtained from the results of *the Pretest* and *Posttest* which were studied using N-Gain. Therefore, an average of 0.53 is classified as a medium category. The following is Table 5 of the N-Gain test results.

Table 5. N-Gain Test Results Cycle I

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Ngain_Score	36	.21	.82	.5257	.15097
Ngain_Persen	36	20.69	81.82	52.5651	15.09728
Valid (listwise)	N36				

The researcher's second cycle of learning strengthens the global warming material where students collaborate with the group in doing investigations in the LKPD and are evaluated using *Blooket media*. In addition, the researcher also appreciated students who had not answered correctly so that they could remain excited. Furthermore, in this second cycle, students' physics learning outcomes increased beyond the KKM described in Table 6 in the *Pretest* stage of 29 students who completed with a percentage result of 80.56%. Then 32 students completed after doing *the Posttest* test with a percentage of 88.89%.

Table 6. Recapitulation of the Completeness Value of Physics Learning Outcomes Cycle II

Stage	Mastery Status	Frequency	Percentage	Average
Pretest	Mastery	29	80.56%	77.67
	Not Mastery	7	19.44%	
Posttest	Mastery	32	88.89%	93.22
	Not Mastery	4	11.11%	

Based on the graph above, it is shown that the average physics learning outcomes have increased and have also exceeded the KKM. During the *Pretest* in cycle II, the percentage was 80.56% of students who completed classically. On the other hand, students who did not complete classically had a percentage of 19.44%. After that, students during *the Posttest* in the second cycle had a percentage of 88.89% in physics that were not completely completed in class, while students who did not complete the class had a percentage of 11.11%. The following Figure 4 is an analysis of the percentage of completeness of students' physics learning outcomes.

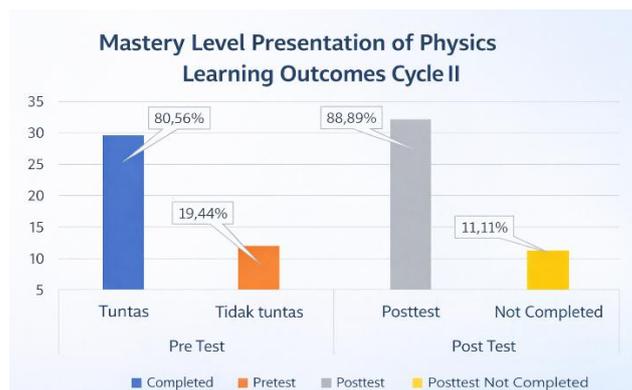


Figure 4. Graph of the level of completeness of the percentage of learning outcomes of physics cycle II

Then the data on the learning outcomes of physics cycle II in the *Pretest* and *Posttest* stages were tested using N-Gain. Thus, the average result of 0.73 is classified as high. The following is Table 7 of the N-Gain test results.

Table 7. N-Gain Test Results Cycle II

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Ngain_Score	36	.07	1.00	.7321	.27654
Ngain_Persen	36	6.67	100.00	73.2129	27.65377
Valid N (listwise)	36				

The results of physics learning in this study were obtained through *pretest and posttest* cycles I and II, then studied using N-Gain. The result of the student's N-Gain in the first cycle was 0.53, which was moderate; in the second cycle, it increased by 0.73, which was relatively high. This proves that students already understand the material and can do the written test well. The following summary of N-Gain data can be seen in Table 8.

Table 8. Summary of N-Gain Physics Learning Outcomes

Action	Learning Outcomes (N-Gain)	Category
Cycle I	0.53	Moderate
Cycle II	0.73	High

Based on the table above, it can be noted that the achievement of physics learning outcomes in cycle I is in the medium category. After improvements and re-planning, learning outcomes in cycle II increased to the high category. The N-Gain increase is shown in the following figure 5.

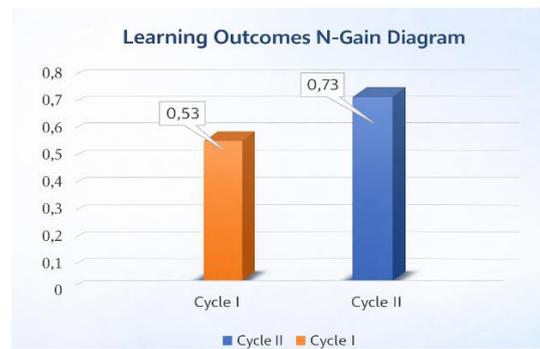


Figure 5. Summary of N-Gain Physics Learning Outcomes Cycle I and Cycle II

Based on the data on the first cycle of physics learning outcomes, some students still get scores below the KKM because they are not confident, do not perform well, and are not ready to take written tests. However, in this second cycle, students have received scores above the KKM because students are ready and confident to face the written test [29]. This is according to research [30], which proves that when the learning process is carried out happily and can attract students' attention, students will be able to understand the material that has been taught, so that the student is ready to carry out the written exam calmly without any doubt. Figure 3 proves that the results of the N-Gain test in the first cycle obtained an average of 0.53, which is included in the medium category. Meanwhile, in this second cycle, the average increased to 0.73 and was included in the high category. The comparison of the average value between cycles I and II was $0.53 < 0.73$. This indicates an increase. This means that students' physics activities and learning outcomes have improved more in cycle II than in cycle I. Based on the results of the study, there was an increase in learning activities and student learning outcomes from cycle I to cycle II. This shows the application of the media-assisted PBL model *Blooket* can be a solution in overcoming the low activity and learning achievement of students in class X 5 physics subjects of SMA Negeri 5 Jember through a problem-solving-based learning approach.

The use of the PBL learning model assisted by *Blooket media* in completing students' physics learning outcomes

This study aims to determine the improvement of students' physics learning completeness through the use of *the Problem-Based Learning* (PBL) learning model assisted by *Blooket* media. SMA Negeri 5 Jember has set the KKM at 75. The research was carried out in two cycles, namely cycle I and cycle II, with a total of 36 students. The Minimum Completeness Criteria (KKM) determined by SMA Negeri 5 Jember is 75. Then, this research is in cycle I and cycle II, with a total of 36 students. In the first cycle of *the pretest* stage, students who completed 8 children had a percentage of 22.22%, while 28 children did not complete the percentage of 77.78% with an average result of 54.78. After that, at the *posttest* stage, 22 children had a percentage of 61.11%, while 14 children did not complete the test, with an average result of 38.89%, with an average result of 78.83.

In cycle II, there was an increase in the completeness of physics learning outcomes. In the *Pretest* stage, 29 students achieved completeness with a percentage of 80.56%, while 7 students did not complete with a percentage of 19.44%, and the average score obtained was 77.67. In the *Posttest* stage, the number of students who completed increased by 32 students or 88.89%, then 4 students did not fully complete with a percentage of 11.11%, and the overall average score reached 93.22.

The data in Table 8 prove that the completeness of students' physics learning outcomes has increased from cycle I to cycle II. In the first cycle, the N-Gain value obtained was 0.73 and was classified as a high category. These findings prove that the implementation of the PBL learning model assisted by *Blooket* media has a good influence on student learning completeness in physics subjects. This increase is influenced by several factors such as: Active student involvement, where students are required to actively participate in the implementation of teaching and learning through group discussions, problem solving, and also presenting results; *Blooket* media is interactive, this media presents quizzes in the form of fun games, so that students are more enthusiastic in answering questions and repeating the material that has been taught; Reflection and improvement of learning. Through the reflection process of cycles I to II, teachers can make improvements to various shortcomings found in the implementation of cycle I.

The increase in learning completeness from a value of 0.53, which is in the medium category, to 0.73 with a high category shows that the application of *the Problem-Based Learning* model supported by *Blooket* media is effective in improving students' physics learning completeness. This learning model not only affects the achievement of grades but also contributes to fostering thinking, discussion, and problem-solving skills. The following is data on the completeness of physics learning outcomes in cycles I and II at the *Pretest* and *Posttest* stages.

At the time of the study, there were several obstacles, such as inadequate school facilities and infrastructure, such as unstable internet connections, and there were some students were initially confused when using *Blooket media*. So, the solution that can be provided by researchers is to provide internet access to students who need the internet. The next solution is for the researcher to explain and tell students about *Blooket media* and how to use it before students use it to do the exercises given.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that there is an increase in the activity of learning physics using the PBL model accompanied by *Blooket media* in grade X 5 students at SMAN 5 Jember. The activities and learning outcomes of physics students in class X 5 with a total of 36 students at SMAN 5 Jember were due to the enthusiasm and enthusiasm of students in participating in the learning process using *Blooket media*. With this, it can be shown that the percentage result of the first cycle, which is 74.58% classified as the active category, then for the second cycle, the percentage result is obtained, which is 91.67% classified as the most active category. So that in this study, all indicators of learning activities increased, but in this second cycle, one indicator that is very prominent is higher in the writing activities indicator, a percentage of 94.44% of the very active category is obtained. There was an increase in physics learning outcomes using the PBL model, accompanied by *Blooket media* in grade X 5 students at SMAN 5 Jember. This can be shown by the average result of the first cycle, which is 0.53, classified as the medium category, while the second cycle obtained an average result of 0.73, classified as high. The completeness of students' physics learning using the PBL learning model accompanied by *Blooket media* in grade X 5 students of SMAN 5 Jember. This is shown in the level of classical completeness of the first cycle in the *pretest stage* of 8 students completed with a percentage of 22.22%, and in the *posttest stage*, where 22 students completed with a percentage of 61.11%. In the second cycle in the *pretest stage*, 29 students completed with a percentage of 80.56%, and in the *posttest stage*, 32 students completed with a percentage result of 88.89%.

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