IMPLEMENTATION OF A PROBLEM-BASED LEARNING MODEL BASED ON KALEGA INTERACTIVE MEDIA (KAHOOT LEARNING GAMES) TO IMPROVE STUDENT LEARNING OUTCOMES IN ECONOMICS SUBJECT CLASS X SMAN 1 JIWAN

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ABSTRACT

This research aims to determine the application of the problem-based learning model based on interactive media KALEGA (Kahoot Learning Games) and improve learning outcomes for class X students in economics subjects with material on non-bank financial institutions at SMAN 1 Jiwan. The methods used in this research are class action research (PTK) and class observation research (COR). Data was collected in class XB, which had 25 students: 14 male students and 11 female students. Observation, tests, and documentation were used to collect data. Results Data analysis techniques use learning outcomes data analysis and problem-solving analysis. The research results showed an increase in student learning outcomes in cycle I by 60%, with the number of students who completed it being 15. while in cycle II, there was an increase of 84%, with 21 students completing it. By reflecting on the suitability of using the problem-based learning model with the interactive media KALEGA (Kahoot Learning Game) used in learning.

Keywords: Problem-Based Learning, Kahoot Learning Games, Learning Outcomes

1. INTRODUCTION

Education is an activity to form the identity of each individual so that he can develop his potential. According to Law of the Republic of Indonesia Number 20 of 2003 concerning the national education system, it is explained that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious and spiritual strength, self-control, personality, intelligence, noble morals, as well as skills needed by himself, society, nation, and state.

Merdeka Belajar curriculum aims to create an interesting and happy learning atmosphere. Independent learning aims to create a pleasant atmosphere for teachers, students, and parents. Freedom to learn means that the educational process must create a lovely atmosphere [1]. Teachers play an important role in teaching and educating students; how the teacher teaches so that it is easy for students to understand can determine the success or failure of the learning objectives. Adjusting teaching materials to students' abilities is carried out during the learning process by paying attention to factors that support teaching and learning activities so that they can be well received and obtain satisfactory results.

The skills of 21st-century students require teachers to be able to create student-centered learning. Students search for and find material and solve problems independently or in groups. As a facilitator, the teacher accompanies and straightens students' understanding of the learning process. This can be combined with learning models and media that can increase students' attention to the material. A learning model is a method teachers use to implement learning plans designed to achieve educational goals. The word model or method is a method used by teachers to implement learning plans that have been prepared and is a tool to achieve learning goals [2]. The development of various learning models goes hand in hand with the rapid progress of technology. The digital era learning model will be more interesting, accompanied by interactive learning media based on e-learning. Learning media is message carrier technology that can be used for learning purposes. Apart from that, media has various benefits, including helping teachers convey their teaching material. Media is also a communication tool that bridges abstract ideas with the real world [3]. Accuracy in selecting media influences learning outcomes and students' success in participating in learning.

Good learning outcomes determine the success of the learning process, and vice versa; poor learning outcomes become a benchmark for failure. Low learning outcomes can be caused by many factors, both external and internal, of students and schools. One factor that influences learning outcomes is the learning model used. This condition is the main factor for economics teachers in improving learning outcomes.

SMAN 1 Jiwan is one of the high schools in Jiwan District, Madiun Regency, which applies the Independent Curriculum in class. At SMA N1 Jiwan, Independent Curriculum learning uses the lecture method, and students are given the freedom to search for material using their gadgets to develop material that has been explained by the teacher and using gadgets to find answers to assignments given by the teacher, thus making learning monotonous and students become bored. With the learning atmosphere in the classroom, this learning atmosphere has an impact on student learning outcomes. Based on the results of the daily test scores for economics subjects at SMAN 1 Jiwan, many students still have scores less than the minimum completeness criteria. The minimum completeness criteria value for this economic subject is 70, while the number of students is 25 people, namely 14 students who meet the KKM of 56% and 11 students who are less than the KKM of 44%.

Based on this data, the main problem for class X students is the low learning outcomes in economics subjects. This problem is caused by teachers still using the lecture learning model. Of course, this causes students to become bored and passive and have difficulty communicating to convey their opinions; students are less trained to develop skills in solving cases of economic problems, so student learning outcomes still need to improve.

Innovative learning models, such as problem-based learning (PBL), are necessary to solve this problem. According to [4] The problem-based learning process requires students to play an active role in learning activities that are not only centered on the teacher but also on improving student learning outcomes on the subject matter presented. Problem Learning is characterized by the presence of real issues and material for teaching students in the learning process so that they can develop knowledge, critical thinking abilities, and problem-solving skills [5]. Problem-based Learning is a learning model that uses a case study or problem to make students think critically to solve a problem.

The ability to understand and create curiosity about learning material can be achieved by implementing interactive media into student learning. Creative use of media can facilitate and increase learning efficiency so that learning objectives can be achieved [3]. Using interactive media through Kahoot Learning Games, Kahoot Learning Games is a website-based learning media containing game quizzes. The Kahoot Learning Games media can be used in economic learning activities. The existence of Kahoot! Learning Games can cause students to be active because learning becomes fun, so it can improve student learning outcomes.

2. METHODOLOGY

This research uses classroom action research (PTK) using a quantitative approach. It is a solution to overcome problems and deficiencies in the field of education in formal schools in general. This classroom action research is carried out in the classroom to improve the teaching and learning process. It can aim to improve the quality of the teaching and learning process so that it becomes even better.

This classroom action research was conducted at SMAN 1 Jiwan, in class X, in the non-bank financial institutions subject in the second semester of the 2023/2024 academic year. The main subjects in this research were 25 class XB students at SMAN 1 Jiwan, consisting of 11 female students and 14 male students with different backgrounds and abilities.

In this research, two cycles need to be carried out, where 1 (one) cycle consists of 1 (one) meeting with a time allocation of 2 x 45 minutes, equivalent to 2 hours. The cycle in the Kemmis and Targgart model research procedure is as follows:

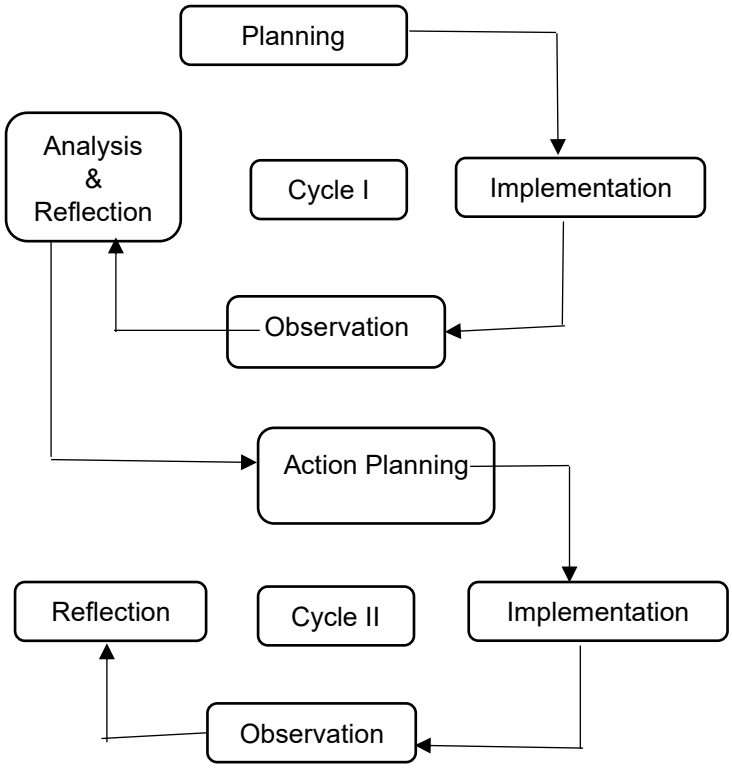

Figure 1. Classroom Action Research Procedures
References : [6]

3. RESULTS

3.1 Application of the problem-based learning model with interactive media KALEGA (Kahoot Learning Games) to improve student learning achievement

The application of the problem-based learning model in this classroom action research shows an increase in student learning outcomes, making it easier for students to understand the material through solving problems, whether individually or in group discussions.

In cycle I, the problem-based learning model using interactive media KALEGA (Kahoot Learning Games) must have been implemented better because students are not used to using Kahoot as a learning medium. However, injury, students clarification adapt to this problem-based learning model. The attitude of responsibility and courage to express opinions is increasingly high, and he always uses the basic theories obtained in each lesson.

In cycle II, the problem-based learning model was implemented well because the teacher could allocate time well. The success of implementing the learning model is because before starting the learning, the teacher provides guidance again to understand the stages that must be carried out in the learning model and learning media so that if obstacles occur in the learning process, they can be overcome immediately. Student participation in the problem-based learning model is very high, and students are already adept at applying Kahoot as a medium for learning. This is aimed at discussing how students can solve problems together without thinking about themselves; they already know how to play quizzes and learn using the Kahoot learning media.

3.1.1 Learning outcomes of students in cycle I, cycle II class X SMAN 1 Jiwan.

The application of the problem-based learning model can also improve student learning outcomes. This can be seen from the average class score and students' completeness, which increase every cycle.

Table 3.1 *Improved Learning Outcomes*

Aspect	Cycle I	Cycle II
Class average	60	84

The highest score	80	100
Lowest value	50	60
Number of students who completed	15 (60%)	21 (84%)
Number of students who have not yet completed	10 (40%)	4 (16%)
Class completion percentage	60%	84%

In cycle I, after taking action using the problem-based learning model with interactive media and Kahoot learning games, there was an increase. Based on Table 4.8 above, it can be seen that the average class score in cycle I was 60. There were 15 students (60%) who got a score above KKM with a score >70. Meanwhile, ten students (40%) still need to receive the KKM score. The highest score obtained was 80, and the lowest score was 50. The percentage of class completion in cycle I needed to meet the success indicator criteria, namely 75% of the number of students. In the learning process, student participation still needed to be improved because some students had opinions but did not comply with the material provided. Be delivered. Students' focus on learning cannot be maximized. Solving group problems is not optimal, and many students still need help using Kahoot. In cycle I, it cannot be said to be complete because the learning outcomes are still less than the achievement indicator, namely 75%. So, improvements need to be made in cycle II.

In cycle II, it showed that the class average score was 84. This indicates an increase in the class average score between cycles I and II. There were 20 students (84%) who scored above the KKM with a score of >70, while four students (16%) still needed to reach the KKM score. The highest score obtained was 100, and the lowest score was 60. The percentage of class completion in cycle II was 84%; with this, it can be seen that there was an increase in class completion compared to cycle I, which was only 60%. The learning outcomes of students in cycle II are very good because the number of class completions has exceeded the success indicator criteria, namely more than 75% of the number of students.

3.2 Learning outcomes of class X students in economics subjects at SMAN 1 Jiwan after implementing the Problem Based Learning learning model with interactive media KALEGA (Kahoot Learning Games)

The results of this classroom action research using a problem-based learning model with interactive media KALEGA (Kahoot Learning Games) in cycles 1 and 2 show increased student activity and student learning achievement. In cycle 2, the desired success indicators have been achieved. Students' enthusiasm for this problem-based learning model is high; this can be shown during discussions, as students look serious and active in studying the material.

The students' activeness and enthusiasm can be seen when using Kahoot learning games as learning media; they are more focused, and all students follow the instructions well. Students are also enthusiastic when presenting, expressing opinions, and answering questions from other groups. Students answer each other without having to wait or be asked by the teacher to answer them. Students are serious about the learning process because the teacher will give prizes to students who get good marks in all aspects determined by all students and teachers.

To find out the improvement in each cycle using the problem-based learning model using interactive media KALEGA (Kahoot Learning Games) can be seen in the following table:

Table 3.2 *Observation results of increased discussion in Cycle One and Cycle 2*

No	Indicator	Cycle 1	Cycle 2
1	Retention of material	52%	67%
2	Ability to express opinions	50%	63%
3	Contribute to groups	51%	63%
4	Ability to accept friends' opinions	46%	68%
Average discussion skills		50%	65%

Based on the table above, the results of observations of increased discussion in cycles 1 and 2 showed that the indicator of understanding the material increased by 15% (52% in cycle 1 to 67% in cycle 2), the indicator of the ability to express opinions increased by 13% (50% in cycle 1 to 63% in cycle 2), the indicator of contributing to the group rose 12% (51% in cycle 1 to 63% in cycle 2), the ability to accept friends' opinions rose 22% (46% in cycle 1 to 68% in cycle 2) and the class average for discussions rose by 15% (50% to 65%).

Table 3.3 *Observation results of performance improvements in Cycle 1 and Cycle 2*

No	Indicator	Cycle 1	Cycle 2
1	Timeliness of collection	50%	70%
2	Completeness of answers	55%	69%
3	Neatness of writing	55%	65%
4	Correctness of the answer	56%	75%
Average work output		54%	70%

The results of observations of performance improvements in cycle one and cycle 2 showed that the indicator of timeliness of collection increased by 20% (50% in cycle 1 to 70% in cycle 2), the indicator of completeness of answers increased by 14% (55% in cycle 1 to 69% in cycle 2), the writing neatness indicator rose 10% (55% in cycle 1 to 65% in cycle 2), the correctness of answers rose 19% (56% in cycle 1 to 75% in cycle 2) and the class average for performance increased by 16% (54% in cycle 1 to 70% in cycle 2).

Table 3.4 *Results of increasing knowledge tests in cycle 1 and cycle 2*

Cycle	Information	Question										Percentage of total score
		1	2	3	4	5	6	7	8	9	10	
1	Score percentage gain	58%	76%	60 %	56 %	72 %	76 %	56 %	64 %	56 %	36 %	62%
2	Score percentage gain	96 %	88%	76%	88%	76%	88%	96%	80%	88%	72%	84,8 %

The results of increasing the knowledge test in cycle one and cycle 2 obtained the following results:

In question number 1 it rose by 38% (58% in cycle 1 to 96% in cycle 2), in question number 2 it rose by 12% (76% in cycle 1 to 88% in cycle 2) in question number 3 it rose by 16% (60% in cycle 1 to 76% in cycle 2), in question number 4 it increased by 32% (56% in cycle 1 to 88% in cycle 2), in question number 5 it increased by 4% (72% in cycle 1 to 76% in cycle 2), in question number 6 it rose by 12% (76% in cycle 1 to 88% in cycle 2), in question number 7 it rose by 40% (56% in cycle 1 to 96% in cycle 2), in question number 8 it rose by 16% (64% in cycle 1 to 80% in cycle 2), in question number 9 it rose by 32% (56% in cycle 1 to 88% in cycle 2), in question number 10 increased by 36% (36% in cycle 1 to 72% in cycle 2) and the class average for the knowledge test increased by 22.8% (62% in cycle 1 to 84.8% in cycle 2).

Table 3.5 *Average success indicators*

Aspect	Cycle 1 Achievements	Cycle 2 Achievements	How to measure
The value of complete learning	54%	83%	Taken from formative test scores
Activeness in class presentations	53%	68%	Observed when students discuss in class
Performance results	54%	70%	Taken from the results of students' work on assignments

The average indicator of success in complete learning scores taken from formative tests increased by 29% (54% in cycle 1 and 83% in cycle 2), student activities in presentations obtained from observations of class discussions increased by 15% (53% in cycle 1 to 68% in cycle 2), and the average performance results taken from students' work increased by 16% (54 in cycle 1 to 70% in cycle 2)

Based on the data obtained in this research, starting from cycle 1 to cycle 2, the application of the problem-based learning model using the interactive media KALEGA (Kahoot Learning Games) to economics subjects can improve learning achievement and student activity in the learning process in class.

4. CONCLUSIONS

Based on the results of the research that has been carried out, the application of the problem-based learning model with interactive media, such as KALEGA (Kahoot Learning Games), can increase learning achievement and student learning activity. Data obtained from the results of observations and tests carried out with interactive media KALEGA (Kahoot Learning Games) shows the following improvements:

a. Student learning outcomes from formative tests increased by 24%, where in cycle one, the completion was 60% (15 students completed, ten students did not complete) and in cycle two, the completion was 84% (21 students completed, four students have not yet completed).
b. Students' activeness in class discussion presentations increased by 15%; cycle 1 was 50% (less active 26%-55%), and cycle 2 increased to 65% (active 56%-75%).
c. Performance results increased by 16%, where in cycle one, it was 54% (less active 26%-55%) and in cycle two, it was 70% (active 56%-75%).

Actions were taken up to cycle two because they had shown increased student learning achievement and student activity in the learning process in class.

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