

Improving Students' Learning Outcomes through Interactive Videos Using Problem-Based Learning Models

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ABSTRAK

Pendidikan tidak dapat dipisahkan dari kurikulum. Indonesia telah menerapkan banyak kurikulum. Saat ini, karena pandemi covid 19, pemerintah telah mengambil langkah-langkah untuk mengatasi masalah tersebut. Kurikulum Menyambut Merdeka dalam dunia pendidikan adalah solusi dari permasalahan tersebut. Setelah mendapatkan data dari observasi di SMKN 6 Semarang, peneliti memutuskan untuk melakukan penelitian dengan menggunakan video interaktif menggunakan model pembelajaran berbasis masalah untuk meningkatkan hasil belajar siswa. Peneliti menggunakan penelitian tindakan untuk melakukan penelitian dan menggunakan data kuantitatif untuk menganalisis data dan kualitatif untuk mendeskripsikan data observasi. Dengan menggunakan pembelajaran berbasis masalah melalui video interaktif terjadi peningkatan rata-rata nilai siswa kelas X Busana 3 setelah peneliti melakukan penelitian..

Kata kunci: video interaktif, problem-based learning,

ABSTRACT

Education cannot be separated from curriculum. Indonesia has implemented many curriculums. Nowadays, because of pandemic covid 19, the government has taken steps to overcome these issues. Welcoming Merdeka Curriculum in education is the solution of problem. After getting the data from observation at SMKN 6 Semarang, the researcher decided to conduct the research by using interactive video using problem-based learning models to improve students' learning outcomes. The researcher used action research to conduct the research and using quantitative data for analyzing the data and qualitative for describing the observation data. By using problem-based learning through interactive video there is increasing in the average of students' value in the class of X Busana 3 after the researcher conducted the research.

Keywords: Interactive Video, Problem-based learning.

1. INTRODUCTION

In term of education, people will understand what education means. Education brings a positive change in human life and behavior. By getting education people will automatically have good life and behavior.

Education is wide term. The education is not only from school, but also from society, or family. But here, researcher limits the term of education in school.

Education in term of school is the key of learning process which be held in school. It is also familiar with formal education. People must come to take a course or even a lesson during a day at school. Formal education begins in elementary school and continues with secondary school.

Formal education requires curriculum. curriculum has a domain in education. it takes a main role in education. Curriculum is what is taught in school. A curriculum is

a set of subject and it is more than just subjects or what is confined to a school.

Indonesia has implemented many curriculums. It always changes as what the students' need. The changes of curriculum give many impacts to education especially in Indonesia. The last curriculum has been implemented is 2013 curriculum. But nowadays as the impact of pandemic covid 19, the government has taken step to overcome this issue. That is why, government gives an allowance to do emergency curriculum. then it is called as Merdeka Curriculum.

This current issue about Curriculum Merdeka which has implemented at some schools in Indonesia used student-centered learning system. It makes students must active in learning process. students also must be taught to think HOTS (Higher Order Thinking) skills. It is one of skills must be used in teaching and learning process.

Not only skills, but also models which is used in learning process is problem-based learning. According to Thanavati (2020) state that the term model is used to mean a teaching episode done by an experienced teacher in which a highly focused teaching behavior is demonstrated, in it an individual demonstrating particular patterns which the trainee learns through imitation.

Problem-based learning (PBL) has been adopted I field of education to promote critical thinking and problemsolving in learning process. Educators must apply in learning process to improve critical thinking of students. By using problem-based learning, it leads positive learning outcomes.

Literature Review Problem-based learning

Yow and Goh (2016) argued that problem-based learning (PBL) is a pedagogical approach that enables students to learn while engaging actively with meaningful problems. Students are given the opportunities to problem-solve in a collaborative setting, create mental models for learning, and form self-directed learning

habits through practice and reflection. Problem-based learning will guide the learning process to create critical thinking. The problem-based learning model is a

learning model to provide an opportunity for students to learn through the problems in everyday life. Problem-based learning can provide the opportunity to the student to work and find a solution from the reallife (Gregory & Champman, 2013, p.171). By getting some problems in learning process, students will be enthusiasm and try to solve the problems given from the teacher.

By the real problem and studentcentered learning, this learning encourages the students to blend more in the learning. By this encouragement, this learning is assumed be able to increase the achievement motivation. The activity in problem-based learning makes the students have personal responsibility in completing the tasks, creatively work and full-heart in following the activity.

The output of problem-based learning is a solution to the problem. The process of problem-solving which start from problem identification until problem-solving, encourage the students to perform the analysis process or evaluation of the problem. The active students' participation in problem-solving allows motivating the student in reaching the learning achievement.

The implementation of problembased learning in learning process is also assisted by using interactive video which is as media to deliver the lesson which is given to students. The media used by the researcher is video.

Interactive Video

Interactive video is one of the innovations in educational technology, as it provides audiovisual information based on the learner's responses, in which sound and images are displayed through a display screen, which is part of an integrated unit consisting of a computer and a data entry device, a program divided into subsections consisting From dynamic sequences, static frames, questions. The learner's responses through the computer are the determinant of the number of sequences of clips or video

scenes (Shalaby, Al-Masry, Asaad and ElDesouky, 2018).

Jett, Sacchi, Lee & Clarke (2016:2), add to the above that the interactive video is a pedagogical academic method that is used by the teacher in the classroom, through which he supports the curriculum. In the video, to be better explained and easier to understand and explain to students of all age groups.

In addition to the above, Anderson & Davidson (2019:16) define interactive video as "a form of media that allows users to interact with content. Interaction in videos can come from many different types of functions. Through it, activating modern teaching methods and raising the level of advanced education, which conveys the explanation and ideas in a much clearer way to the student than the traditional method."

The interactive video has many characteristics as it provides the ability to control the presentation of the learner, interact with the links and options that appear during the video playback, and also provides more explanation and additional information that can be provided according to the preferences of each student, and is characterized by flexibility and ease of dealing in terms of The possibility of submitting and returning with the video when explaining, the ability to close it and turn it on at any time, and the possibility of modifying it according to the requirements of the lessons to be explained (Hassan & Obedidat, 2022).

Previous research findings stated that the problem-based learning model could increase students' enthusiasm for learning (Defiyanti & Sumarni, 2019; Sofyan, 2016; Umbara, Sujana, & Negara, 2020). The researcher also find previous research about using interactive video in learning process showed that the use of interactive learning video could increase students' motivation in following the lesson (Pramerta, 2018).

2. METHOD

The subject of this study were students of X Busana 3 High School 6 Semarang, 36 female students. The object

research is the students' learning outcomes through interactive video using problem-based learning.

The design and steps in this study used the action research design (action research). Kurt Lewin's model has become a reference for various action research models because Kurt Lewin was the first to introduce action research. The main components in Kurt Lewin's action research are planning (planning), action (act), observations (observing), reflection (reflecting). The relationship between the four main concepts is illustrated by the following diagram.

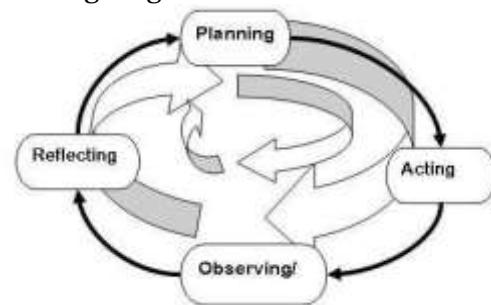


Figure 1. Step of Action Research

This method used to collect data are observation, and test. Then the population of the research was X Busana 3 of SMKN 6 Semarang. The action research design was used to evaluate whether interactive video using problem-based learning is effectively used as a medium of learning in the process of learning English to improve student learning outcomes. The data analysis technique used qualitative and quantitative data analysis technique.

3. FINDINGS AND DISCUSSION

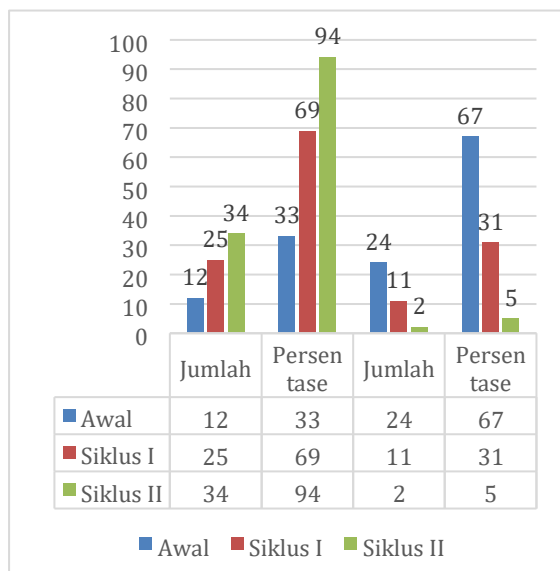
The use of the problem-based learning method will be very helpful in improving student learning outcomes, this is evident from the learning outcomes given in each cycle has increased where the average value in the initial study is 67,58. The first cycle the average value obtained by the students is 82,69. And at in cycle II, the average value obtained by students was 91,25. The number of students who completed the initial condition was 12 students (33%), increasing the first cycle the average value obtained by students is 82,69. The number of students who completed the first cycle was 25 students (69%). The second cycle, the average value obtained by

the students is 91,25. The number of students who completed the second cycle was 34 students (94%). Recapitulation of students' formative assessment result from initial condition, cycle I to cycle II can be seen in Table below.

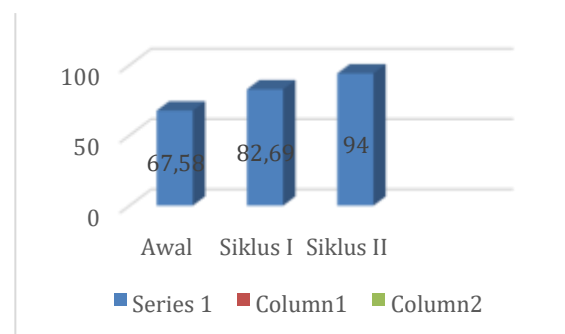
Table 1
Value of formative test results Pre cycle, cycle I and cycle II

No	Learning Stage	Average	Student achievement			
			Completed	%	Not yet	%
1	Pretest	67,58	12	33	24	67
2	Cycle I	82,69	25	69	11	31
3	Cycle II	94	34	94	2	6

To clarify the increase in students learning outcome and the decrease in student learning outcomes can be seen in bar chart below.



The explanation of the increase in the average value of learning outcomes in learning material narrative through interactive videos using problem-based learning models shows a significant increase where the average value in the initial conditions is 67,58 and the first cycle the average value obtained students were 82,69 and in cycle II the average value obtained by students were 94. The increase in the average value of student learning outcomes in graphical form is shown below:



The increase in learning outcomes indicates that learning using problem-based learning models can improve students learning outcomes. This is because this learning is designed so that students can learn to form their knowledge both individually and in groups with the help of the instructions given. The learning pattern of problem-based learning models places students as subjects in active learning to build knowledge through investigations to solve problems based on certain stages.

Problem-based learning helps students to get information already in their mind and devise their own knowledge of basic and complex knowledge. Problem-based learning has a student-centered characteristic, designed based on real problems that encourage students to build a rich knowledge of contextual mathematical concepts through a series of constructive questions. Problem-based learning is a student-centered learning, while before the use of learning problem-based learning in class is only centered on teachers. Learning that involves students in learning to solve real-life problems can increase motivation and curiosity to

increase

DISCUSSION

This classroom action research has succeeded in increasing students' learning outcomes through interactive video using problem-based learning models. Here is the steps of this research using action research. There are two cycles the researcher used in this research. Each cycle has two meetings and four steps; Planning, action, observation, and reflection.

CAR's Cycle I

a. Planning

Planning began with developing learning tools consisting of lesson plans, teaching materials, media, students' worksheets, mastery evaluation instruments for learning, and communication questionnaires. The cycle I activity was expected to be completed in the fourth meeting. The PBL learning model directed students to the problem-solving session in a group discussion. During the cycle, teachers' and students' activities were observed by collaborators using observation sheets and field notes. The observations of researchers and collaborators were analyzed (reflected) as a basis for determining the next step.

b. Implementing Actions

The implementation of learning activities used the PBL model, consisting of 5 stages. Students were given sufficient explanation regarding the material and an explanation of the stages of the PBL learning model that would be used and then oriented to problems related to the material. Problems were presented using the image, video, and Power Point media. The teacher organized students into six groups of four to five students to research problems, formulate hypotheses, and solve problems. The teacher trained students to carry out investigations both independently and in groups. The teacher went around to check the implementation of the discussion activities. The teacher would assist in the form of instructions for discussion participants who were still having difficulties, so they were not notified directly about the truth. Thus, group

members were expected to be able to do their problem solving. After the discussion ended, students were allowed to present their work in the form of a simple report. Group representatives were asked to deliver the discussion results in front of the class. At the end of the activity, students and teachers confirmed, analyzed, and evaluated the problem solving process. c. Observation As collaborators put, students were conditioned to take part in PBL's activities, but they found passive students in almost every group. Group activities were dominated by students who were dominantly intelligent in their groups. The tasks of each group member had not been clearly divided. There were students who just kept quiet and waited for their friends to complete tasks without giving input and suggestions. Passive students tended to be ignorant and were busy with themselves. In general, all groups completed the given task. In the presentation activity, students dominated in the group presentation. At the end of the activity, a confirmation was required concerning the answers emerged. Students markedly seemed active in question and answer activities. After the discussion ended, an evaluation of learning mastery was conducted using the question-and-answer method and tests. d. Reflection

The researcher and collaborator reflected on the implementation of cycle I in the form of qualitative and quantitative data. Quantitative data were in the form of complete test results of English test. while qualitative data were in the form of observation sheets, and field notes. The CAR's Cycle II was undertaken to improve the cycle I. Some conditions needed some improvements in the cycle I include (1) passive students, (2) smart students who dominated in the class, less dominated students in interactions with other group members.

Cycle two

a. Revise Plan

The researcher did this cycle based on the reflection of the first cycle with the teacher of English. In this revise plan activity, the teacher prepared the instructional tool for

teaching and learning process such as; arranging lesson plan. Here the lesson plan was modified with different material and activities from the previous one but still used problem-based learning models and through interactive video. It's supposed to make the students would get better improvement on their result. Then, the teacher prepared media, observation checklist which needed in teaching learning process. The teacher also prepared test for the students which the test was different topic in this cycle than the test in the previous cycle.

b. Acting

In this action the teacher began her teaching by opening and greeting. The teacher asked the students to pray together, checked the student's attendance. The teacher gave video about narrative. The teacher divided the students in to five groups. Then students analyzed the past tense.

c. Observing

In this phase, during the teaching learning process, the researcher observed the students' condition when teacher did learning process and the students did activities using problem based learning strategy.

d. Reflecting Finally, to measure the students understanding on discussion text using problem-based learning strategy the researcher gave the test

4. CONCLUSION

The Based on the results of data analysis and the findings in this study, it can be concluded that 1) Learning by applying the problem-based learning model through interactive video can improve student understanding and learning outcomes because the problem-based learning model directs students to find their knowledge. In this study, it is directed to carry out activities independently so that it greatly supports the improvement of understanding and student learning outcomes gradually with guidance to find their knowledge through activities carried out by students repeatedly so that the implementation of the learning process becomes more active and meaningful for students; 2) The application of the problem-

based learning model in learning with narrative material is proven to be able to improve students' understanding of learning. This is indicated by the increase in student understanding, which shows that the acquisition in the initial study was only 12 students or 33%, increased to 25 students or 69% in the first cycle, and also 94% or 34 students in the second cycle.

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