

Optimizing Bandicam in the Making of Video Presentations For Interactive Static Fluid Materials

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Abstract - Covid 19 pandemic has had a significant impact on all aspects of life, one of which is education. Physics lesson that's previously conducted face-to-face then turned into virtual lesson with the use of online media. It raises problems for both students and teachers, especially in interacting the subject matter between students and teachers and understanding the subject matter. In addition, the students' response to the lessons has decreased. This research aims to determine the effect of the Bandicam application on student's physics learning outcomes and to find out the student's response to the Bandicam application during physics teaching and learning process. The research method used the stages of ADDIE model development (Analysis, Design, Development, Implementation, and Evaluation). This study begins with a pre-test and then a post test is carried out after learning. The classes are divided into a control class and a treatment class, and are conducted using WhatsApp and Google Classroom. However, there are still some shortcomings on the conduct of the classes. This research was conducted for 11th graders majoring Mathematics and Natural Sciences (Class XI MIPA 1 and 2) at State Senior High School (SMA Negeri) 1 of Krian. It supports the physics learning process, especially for static fluid material. Bandicam application as a medium for learning physics can improve students' cognitive learning outcomes in understanding physics. In addition, the students responded well to the use of this media because it provides innovation in terms of learning styles. Media can increase student's interest in learning physics, especially for static fluid material.

Keywords: Online Learning; Bandicam Learning Response; Learning Outcomes, Static Fluid

INTRODUCTION

At the beginning of 2020, the spread of the corona virus in Indonesia had a tremendous impact in various fields of life, including in the world of education (Purwanto, et al., 2020). This corona virus case resulted in significant behavioral changes and behavior patterns that were different from normal conditions, including in Indonesia. This change in behavior can be seen in the world of education in Indonesia. Since the beginning of the Covid 19 pandemic until now, almost all educational institutions have been closed to prevent transmission so that face-to-face learning cannot be done directly. The teaching and learning process are still uneasy to conduct and finally it must be conducted using Online Learning by using various learning applications. At the beginning of the Covid-

19 pandemic, the term Physical Distancing was applied so that they had to change learning into learning from home or work from home (Herliandry, et al., 2020). This incident requires lecturers, teachers, students to carry out learning, do assignments, discuss, take exams and do consultation using online media. The Minister of Education and Culture issues Circular Letter Number 4 of 2020 concerning the Implementation of Educational Policies in the Emergency Period for the Spread of Corona Virus Disease (COVID-19). The policy outlined in the Circular is regarding Online Learning carried out by all levels of education.

Before the Covid 19 pandemic hit, teachers and students could conduct two-way learning that allowed mutual interaction to understand the material.

However, during the pandemic, teachers and students cannot interact directly and can only do one-way interactions in the provision of materials and assignments for students, which causes students to lack understanding of the material presented by the teacher. This is even more so in subjects that require calculations or logical reasoning such as physics lessons where there are many mathematical formulas and calculations in solving a problem in learning. Therefore, the teacher needs online learning media that is more integrated and communicative to support the learning process. This online learning innovation provides a new paradigm and perspective for educational institutions, that is, that learning is not only done face-to-face but can also be more effective by using online media. (Fitriyani, 2020)

Online learning has recently caused a lot of complaints from students and parents. In this learning, teachers and students must use online applications, such as WhatsApp and Google Classroom, which still interfere with the process of delivering the material to students. In addition, one-way interaction results in a decreased in the student learning outcomes due to lack of understanding of the material described by the teacher (Arif, 2018). In addition, sometimes students feel bored with one-way online learning style in which they are only given assignments. One application that supports an integrated online learning process is Bandicam. In addition, the Bandicam application can connect with other applications such as YouTube, zoom, windows media player, and virtual whiteboard. It supports the learning process of physics, in this case the static fluid material, which requires complexity in supporting the learning process that requires an explanation of formulas and logical reasoning.

Therefore, this research is Optimizing the Use of Bandicam Applications to Make Interesting and Interactive Video Presentations. So, it is expected that it can be a solution to online learning problems in the Covid 19 Pandemic Era. The purpose is to determine the effect of the Bandicam application on student's physics learning outcomes and to find out the student's response to the Bandicam application during the physics teaching and learning process. Online learning is a series of instructional experiences which use digital networks to interact, discuss and solve a problem.

RESEARCH METHODS

This study of Bandicam learning media is based on the ADDIE

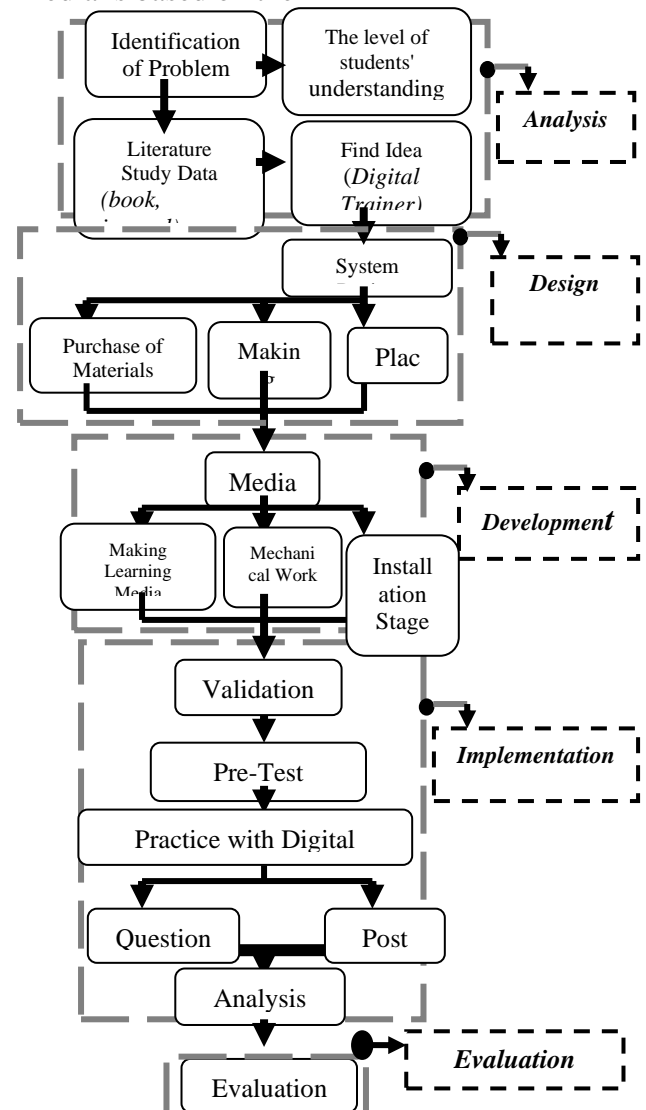


Figure 1. ADDIE Method

The implementation of the development of Bandicam Learning Media is carried out in the stages that follow:

1. Developing Learning Instruments

The instruments used to support the learning process with Bandicam media are online modules on static fluids material as the learning media, evaluation sheets (pre and posttest), lkpd (student worksheets) as instructions in carrying out online practicum learning.

2. Developing Bandicam learning media

The innovation of developing learning media with Bandicam begins with identifying existing features, then connecting the app to several other applications that can support the implementation and complete the functions of Bandicam

3. Validating Basic Training Devices and Media

This stage is carried out after the learning media has been completed and the feasibility test is carried out by expert lecturers of learning media. Here, input is given for the development of integrated media devices.

4. Testing Basic Training Learning Media

The next stage is testing Bandicam learning media in schools for the data collection process. The target school is SMA Negeri 1 Krian, Sidoarjo. The sample for the trial is students of class XI. This is because the material is a part of basic competencies specified for class XI. The testing was implemented in September - October 2020 with 32 Students.

The learning stages conducted during the trial of this Bandicam learning media are as follows:

1. Pre-test, in which the students were given questions about static fluid in the form of 15 multiple choice questions before the beginning of the learning process. This

stage is conducted for both the control class and the class which was given this Bandicam lesson.

2. Introduction of static fluid material to students in 2 classes, which is done online by optimizing Bandicam media in combination with the zoom application, and YouTube.
3. Practicum using Bandicam learning media which is connected to PHET simulation, to train students' psychomotor skills in static fluid material.
4. Post-test, carried out at the end of online learning using this Bandicam learning media, in which the students were given a total of 15 questions
5. The distribution of questionnaires to determine student responses during the learning process with Bandicam media. The data collection method was carried out by validating research instruments to UNESA Physics lecturers and lecturers who are experts in media, as well as to Physics teachers at SMAN 1 Krian. Meanwhile, the data analysis techniques carried out were analysis of the learning implementation process, analysis of pre-test and post-test results with n-gain score analysis, analysis of device validation sheets and Bandicam Learning Media.

RESULT AND DISCUSSIONS

This research is conducted to determine the increase in student learning outcomes, the implementation of learning with the Bandicam application, and the students' response to learning with the Bandicam application. Learning with the Bandicam application is a relatively new thing but it can be implemented in an integrated manner using discussion through chats, and others. However, these choices are unfortunately burdensome for those who have poor networks, which in turn can have

an impact on the student's assessment. An overview of some of the features of Bandicam related to physics lesson is as follows:

1. Screen recorder



Perekam Layar

Figure 2. Screen recorder

Recorder of all shapes and sizes of the screen display of what the user was currently opening and using. Before recording, we can set the output to be in AVI or MP4 format, and for images, JPG format. During recording, there will be a help button at the top when we move the mouse to the top.

2. Game recorders



Perekam Gim

Figure 3. Game Recorders

Game recorders have a lot in common with screen recorders as shown above. One of its advantages is that the game recorder will focus only on recording game applications when the user minimizes the game or wants to open another application.

3. Tool Recorder



Perekam Alat

Figure 4. Tool Recorder

The Bandicam recorder can record processes that occur to viewers on-screen on projectors, smartphones, IPTV, PS4, Xbox, and webcam cameras. The recording results adjust the Recorder of all shapes and sizes of the screen display of what the user was currently opening and using. Before

recording, we can set the output to be in AVI or MP4 format and, for images, JPG format. During recording, there will be a help button at the top when we move the mouse to the top, where the quality of each device that is inserted.

4. Live Drawing



Menggambar Secara Langsung

In this feature, we can use virtual tools such as ballpoint pens to figure out or simply add writing and notes on the screen when the user is recording. There are several color and thickness options that the user can adjust to vary the recorded writing.

5. Adding a Webcam Camera Overlay



Tambahkan Overlay Kamera Web

Figure 6. Overlay Camera

In this feature, users can add their webcam camera view to be included in the desired screen recorder video display. This function adds an interactive impression between the user who records the screen and the recorded screen to the viewer of the video when the video is shared.

Using Static Fluids material of Physics subject, this research will be conducted on the students of class XI. This study uses Static Fluids because this material is contextual and integrated in everyday life. In addition, this material will also be tested using Phet simulation, which is also connected to the Bandicam application.

Bandicam Company claims that Bandicam is the most light-weighted and easy-to-use recording application on every user's computer device.

Bandicam Company claims that Bandicam is the most light-weighted and easy-to-use recording application on every user's computer device. Bandicam's ability to record the screen includes not only the entire screen. Users do not need to be afraid to record the use of an application with a high processor and RAM usage. This is because Bandicam will not affect the process of using the application when recording and photographing the user's screen.

The diagram above describes the percentage of learning styles and teaching materials. Here, the data obtained that as much as 8.7% of the delivery of materials and learning styles was very well received by students; while 78.3% of the delivery of material and learning styles was well received by students, and 13% was received quite well by students. This states that the process of delivering physics teaching materials on static fluid materials using Bandicam media has been carried out well in the learning process so that the delivery of material can be more precise and effective to support optimal learning.

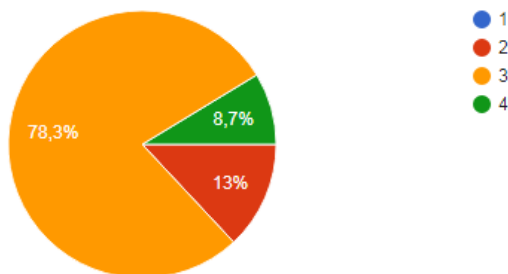


Figure 7. Learning Style Diagram and Teaching Material

Figure 8 shows the percentage of student's interest in participating in physics learning using the Bandicam application, in which 10% states that they are very interested, 75% interested, 10% quite

interested, and 5% not interested. Based on the figure above, it can be stated that learning physics using the Bandicam application is interesting for students in learning physics.

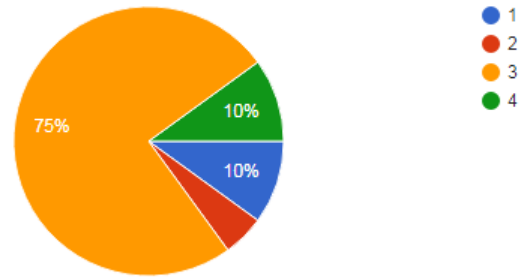


Figure 8. Static Fluids Learning Interest Diagram

Based on Figure 9, after the learning process using Bandicam application on static fluid physics material was conducted, it was found that student's understanding of static fluid material delivered by Bandicam application was of 75% and 25%. So based on the results of the diagram above, that student's understanding of static fluid material delivered using Bandicam media is increasing.

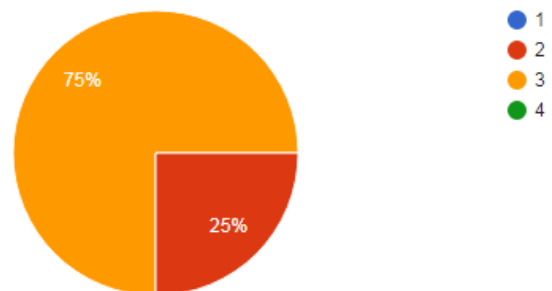


Figure 9. Understanding of Static Fluids

Video will provide optimal benefits when used according to its potential. Video media gives opportunity for users to learn through the elements of sound (audio) and images (visual) simultaneously. This medium can be used to convey information and knowledge in a realistic and concrete manner, which is impossible to be conveyed by the printed media (Pribadi,2009). The results of this study are supported by various previous studies, including by Herayanti & Safitri (2019); Wulandari *et al.* (2020);

Panggabean (2020) which states that Bandicam makes online learning more effective and integrated so that it is easier for students to understand. (Cahyono, 2021)

CONCLUSION

This study concludes that the use of Bandicam application in learning can improve student learning outcomes in learning physics. In regards to physics, this Bandicam application runs well. Which makes the participants enthusiastic and interested in learning physics, hence increasing students' learning motivation.

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