



Utilization of Whiteboard Animation Application as Video-Based Learning Media

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ABSTRACT

Educators can use the whiteboard animation application as a means to support success in the learning process which is expected to run smoothly and improve learning, one of which is the use of video-based whiteboard animation applications as learning media, but there are still many educators who are less update in using the whiteboard animation application. The purpose of this study was to determine the extent of utilization of the whiteboard animation application as a video-based learning media. This research uses quantitative methods using survey models and in-depth interviews. The survey used in this research is online-based. The results obtained from this study indicate that students' understanding increases when educators use whiteboard animation applications in learning activities. The conclusion of this study explains that the utilization of the whiteboard animation application is very helpful for teachers in the process of explaining learning material and students understand it more easily so that student achievement increases. Therefore, the limitations in this study, that the research only conducted research on whiteboard animation applications in learning, researchers hope that future researchers can conduct research on whiteboard applications more deeply.

Keywords: *Learning Media, Utilization, Whiteboard Animation*

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INTRODUCTION

In this modern era, it is very suitable for learning (Kermany et al., 2018), which leads to the advancement of Science and Technology (IPTEK) because future generations will not be separated from technological developments (Dalenogare et al., 2018; Ivanov et al., 2019; Scherer et al., 2019). The current generation is included as a

digital native generation, which is a generation surrounded by technology-based knowledge in learning. But along with the times technology and information have a very important role in the world of education (Al-Rahmi et al., 2018), The development of education and information technology has a significant influence on humans. Where the science of technology changes the way educators interact with students (Zajdel et al., 2021), and in the world of education can process educational materials.

The development of science and technology has spread in the world of education. one of them is the whiteboard animation application (Wessel et al., 2019; Zollhöfer et al., 2018) , this application is software where this whiteboard animation application has a definition that whiteboard animation is a method of developing animation-based micro video learning media that presents presentations using image illustrations (Ohashi et al., 2021), and text on a white background (Obermeyer et al., 2019; Siegel et al., 2018; Zollhöfer et al., 2018). This media is very suitable for use as a learning media for junior high school students and researchers conducted research at SMK Negeri 1 Jeti, to find out whether educators at SMK Negeri 1 Jeti use this application or not because this application makes it easier for educators to convey learning material.

Learning media are all objects or things used by teachers to provide teaching materials or transfer lessons to students, as for the types of equipment used to teach students, be it in the form of radios, websaids, or other devices (Li, 2019; Mohseni et al., 2018; Pion-Tonachini et al., 2019), Both audio and visual are very helpful for educators in channeling knowledge to students. According to the opinion of (Selvaraju et al., 2020; M. Wang & Deng, 2018) Audio visual media is media that involves two human senses, namely the sense of hearing and the sense of sight simultaneously which will be directly used by students. Using this audio visual media, students will find it easier to understand the lessons given by educators because they feel more happy because they are given features that are not boring so that they increase their mood during learning and are more enthusiastic in learning (Chen et al., 2020; Qiu et al., 2020). Make the knowledge of students increase.

However, in class learning activities, there is still a lack of utilization of media in learning activities (Kermany et al., 2018), However, educators are still more dominant in using the lecture method in delivering learning materials to students which is teacher centered, conventional, and there is still no way of diversity (Adl et al., 2019; LaJeunesse et al., 2018), creations in delivering learning materials. This causes students to be less interested in learning they feel bored and saturated when learning, sometimes educators in delivering material (Pratt, 1999; Ryan & Deci, 2020; Wei, 2018) too fast so that students do not understand the lessons conveyed by educators plus students who are not too interested in repeating lessons at home and this makes the value of student learning outcomes low.

According to (Ryan & Deci, 2020), The whiteboard animation application is made to facilitate educators in giving explanations and providing illustrations directly

to students without having to imagine it. Thus making it easier for teachers, in making the class run more exclusively. (Buda et al., 2018), and efficient in learning. This application can be used on laptops, computers, smartphones and other media. The students are encouraged to be able to understand and analyze in the learning that takes place (Rahmatabadi et al., 2018) . Results that can be obtained by researchers using surveys (Gu et al., 2018; James et al., 2018), by filling out a google form questionnaire obtained as many as 12 answers from educators who teach at SMK Negeri 1 Jeti through the google form link that was distributed.

Video is an alternative learning or learning media that uses sound and images that are suitable for increasing students' interest in learning, whether it is independent learning (Readhead et al., 2018), in groups or in bulk. In doing learning will be fun and in the video displays a variety of images that can display sound (Ammari et al., 2019; Hoy, 2018) to explain about the images shown in the video, and this will make students feel excited in learning activities even though sometimes there are some students who ignore them (Kuntner et al., 2019), and being indifferent to the lessons presented in the classroom.

The teaching and learning process is very important in the world of education, because in the learning process there are sometimes some lack of explanation of a desired discussion (O.Nyumba et al., 2018; Tang et al., 2021). According to the media (Chen et al., 2020; Hoffmann et al., 2020) learning media is used as an intermediary tool to fulfill this clarity and will get answers to all things that are questioned. Learning media can substitute or replace what is lacking from the material that has been delivered by educators. Learning media is also very helpful in strengthening clarity (Clark et al., 2019). According to (W. Wang et al., 2018; Yokoe et al., 2018) Through video media, educators can display any material that they will convey in class so that the confusion about the material becomes clear.

The purpose of this research was conducted in order to find out the extent and how the utilization of the whiteboard animation application as a medium for teaching and learning (Jiao et al., 2018), video-based learning at SMK Negeri 1 Jeti as learning media (Al-Rahmi et al., 2018; Carvalho et al., 2019). The initial thing done by the researcher is to find out the advantages and disadvantages of this whiteboard animation application whether it will be suitable for learning at Madrasah Tsanawiyah Islamiyah Batahan school, the researcher also investigates what factors will be an obstacle when using the whiteboard animation application there are obstacles (Dinesh Kumar et al., 2020). According to (Kelso & Feagins, 2018), When using the whiteboard animation application and applying whiteboard animation in learning, it can facilitate teaching and learning activities in the classroom.

RESEARCH METHODOLOGY

This research utilizes a quantitative research method with a survey model and a thorough interview with one of the teachers who utilizes this application in the learning method. Researchers used a survey model because many students now use smartphones

(Kelso & Feagins, 2018; Selvaraju et al., 2020), Using a survey model makes it easier for researchers to conduct research and this research is also in line with the desired objectives to collect data and analyze the opinions of students and teachers regarding the use of whiteboard animation applications as video-based learning media in learning in junior high schools. The place conducted for this research was at SMK Negeri 1 Jeti in East Java in the odd semester of 2022.

The results that I can get from this research I got from teachers who teach at SMK Negeri 1 Jeti who filled out the google form (Agha et al., 2019; Letunic & Bork, 2019). This, the researcher did to be able to facilitate the research process and get opinions from teachers at SMK Negeri 1 Jeti in East Java. The results that can be obtained from researchers are getting as many as 12 teachers who fill out a questionnaire from google from which the researcher has distributed (Huang et al., 2020; Schober et al., 2018). So this questionnaire has been filled in by several teachers who teach at SMK Negeri 1 Jeti in East Java. They have different responses regarding the utilization of video-based whiteboard animation applications in this learning. Researchers focused on one of the teachers who had filled out this questionnaire in order to find out more information.

Researchers made various questions on the google form questionnaire regarding the utilization of video-based whiteboard animation applications in learning (Barredo Arrieta et al., 2020). After conducting a survey using Google form, the researcher continued by interviewing in depth one of the teachers who taught at SMK Negeri 1 Jeti. The questions asked by the researcher were answered in detail by one of the teachers interviewed regarding the utilization of video-based animatin whiteboard applications in learning. The results that have been collected from the results of conducting surveys and interviews are then presented using quantitative methods (Sudarman, 2021), by calculating the percentage of the number of answers given by students and teachers at SMK Negeri 1 Jeti. The research is presented in tabular form with the results of the percentage of answers given. It is in the discussion of the research results that the researcher's opinion is developed and conclusions are obtained by the previous researcher.

RESULT AND DISCUSSION

The results of the research conducted by a survey through a google form questionnaire have been filled in by 12 teachers at SMK Negeri 1 Jeti, which is located on the Mojolebak Highway, Jetis District, Mojokerto Regency, East Java province. In the questions given in the google form questionnaire regarding the utilization of the whiteboard animation application in video-based learning. From the results of the data obtained by researchers from sources that teachers in this school generally already know this whiteboard animation application and most teachers already know how to use this application but there are some teachers who do not understand how to use this application in learning. Most students at SMK Negeri 1 Jeti, do not understand the utilization of video-based whiteboard animation applications in learning. The teachers

considered this application to be very useful in the teaching and learning process and made learning activities more effective and enjoyable for students so as to increase interest in learning. This application seems very suitable to encourage students' interest in learning.

Table 1: Percentage and Research Results at Islamiyah Batahan Private Tsanawiyah Madrasah School

No.	Question	Answer (Percentage)	Description
1.	Do you know about video-based whiteboard animation application?	100% very knowledgeable	All teachers are very knowledgeable about this whiteboard animation application.
2.	Do you know how to use this whiteboard animation application in learning?		Ten teachers know how to use the whiteboard animation application and two other teachers do not know how to use it.
3.	Do you agree to use the whiteboard animation application as a learning media?	80% very knowledgeable 20% less knowledgeable	Nine teachers agree to use the whiteboard animation application as a learning medium and three teachers disagree to use the whiteboard animation application as a learning medium.
4.	Is this whiteboard animation application effective if applied as a learning media?	75% agree 25% disagree	Eight teachers think that the use of whiteboard animation application is effective in learning and four other teachers answered that it is less effective to use in learning.
5.	Will all students not be bored if they use the whiteboard animation application?	70% effective 30% less effective	All teachers consider that all students will not be bored if using this whiteboard animation application in learning.
6.	Is using this whiteboard animation application able to increase students' interest in learning?	100% Agree	All teachers think that by using this whiteboard animation application, all students will be eager to

			learn.
7.	Can using this whiteboard animation application help teachers in delivering learning materials?	100% Agree	All teachers think that by using this whiteboard animation application, it makes it easier for teachers to convey learning materials to students.
8.	Can using this whiteboard animation application help students and teachers in carrying out learning?	100% Agree	Ten teachers answered yes and two teachers answered no.

In distributing questionnaires conducted by researchers, researchers have obtained a summary of the results of filling out questionnaires through Google from, where the first question (Do you know the whiteboard animation application?), The question that the researcher asked was answered by twelve teachers with the answer that the twelve teachers already knew very well about the whiteboard animation application and none of them did not know the whiteboard animation application, but there were still many of them who had not used this application in the teaching and learning process because the media to carry out learning was limited at school.

From the questionnaire question google from, for the second question the researcher asked a question whose question was (Do you know how to use this whiteboard animation application in learning?), from the results of the questionnaire above it can be seen that those who answered yes to this second question were 9 teachers who already knew how to use the whiteboard animation application in the learning process and there were three teachers who answered that they did not know how to use this whiteboard animation application in learning, these teachers did not know how to use it because they were less accustomed to using technology in the sense that they were less literate in the development of increasingly sophisticated technology in this day and age.

For the third question (Do you agree to use the whiteboard animation application as a learning medium?), and researchers have obtained answers from teachers who have filled out questionnaires through google from which have been distributed by researchers where the answers from these teachers, seven teachers agree to use the whiteboard animation application as one of the learning media because using this whiteboard animation application can make it easier for teachers to convey learning material to students, and there are five teachers who disagree with the use of whiteboard animation applications in learning activities because, if using whiteboard animation applications in learning teachers are afraid that students will not focus on the learning provided.

In the fourth question which the researcher's question is (Is this whiteboard animation application effective if applied as a learning media?), in this question the researcher can already conclude how the teachers' opinions on this fourth question

where six teachers answered that the use of this whiteboard animation application is effective for use in the learning process because it has interesting features that make students focus on the media and learning materials presented by the teacher, while there are six teachers who answered that it was less effective to use the whiteboard animation application in learning due to lack of mastery of the material regarding the discussion to be presented so that it would make learning ineffective and less focused on learning.

The fifth question which is the question asked by the researcher in the google link questionnaire from which the question is (Will all students not be bored if they use the whiteboard animation application?), on this question the researcher got answers from all teachers who all answered in the affirmative because the teachers thought that if they used this whiteboard animation application the students would feel challenged by what the teacher displayed in the lesson so that the students were more ambitious in learning, so that the students' scores would increase and would make them more diligent in learning activities both doing assignments.

From the table above for the sixth question, the researcher has also obtained a summary of the questions asked by the researcher where the question is (Is using this whiteboard animation application able to increase students' interest in learning?), the answers of the teacher teachers who filled out the questionnaire given by the researcher, stated that all teachers agreed, that using the whiteboard animation application learning media can make learning more effective, because according to the teacher teachers who have given answers students will focus on the media displayed and make students focus.

The seventh question (Can using the whiteboard animation application help teachers in delivering learning materials?), all teachers answered in the affirmative because according to the teachers using the whiteboard animation application can facilitate the teachers in delivering learning materials without them doing the lecture method again to deliver learning materials, although they will explain the material but the task of the teachers in explaining it will be reduced they will only reinforce the material that has been shown through the video displayed with the whiteboard animation application.

The eighth question (Can using this whiteboard animation application help students and teachers in carrying out learning?), from the percentage of answers that have been presented in the table above, the researcher concludes that there are nine teachers who answer they agree that using the whiteboard animation application will help the continuity of learning and there are also teachers who answer less agree about this question because they think that using this application will have many obstacles in its use, it could be that later in its use it is constrained by the internet network, the tool is damaged and the sound issued is less clear.

Application is the use, a device, a material, a discussion, the activity of a device that can be used and applied to new things. But in general, applications are media that are used separately and incorporated according to the expertise that exists in the application or computer device. Applications are very useful for all groups, both young and old, especially when all activities require access using

applications such as paying for groceries, ordering food, or buying equipment, now more people are utilizing applications.

Whiteboard animation devices include devices that require use. Whiteboard animation devices such as interactive videos are designed and contain learning materials. The use of whiteboard animation has an effect on the effectiveness of learning because almost all electronic products in the video include preparations from educators that are matched with the behavior of students and the material to be taught by educators, this device is often called a videoscribe device. The use of whiteboard animation applications in learning that makes students more challenged in learning. Learning video devices are devices that provide sound and images that contain various contents that vary regarding learning or that contain designs, rules, steps, ideas, applications in supporting knowledge about an understanding. As an educator, you should already understand and understand to develop learning media to support success in the learning process which is expected to run effectively and efficiently.

Whiteboard animation videos are known by other names, such as sketch videos, doodle videos, scribing videos, or explainer videos. Whiteboard animation is where an artist sketches drawings and writings on a blackboard or paper, canvas, to express something that will be learned by students. As for the advantages and disadvantages of whiteboard animation where the main state of a person during learning is when the use of clear text and images simultaneously, a person will be interested in learning when a person can see animation and audio displayed simultaneously rather than just using animation and words, people will learn better if learning is done more concisely or simply. The weaknesses and obstacles that occur in the use of video-based tools include the following, the audience cannot be controlled, engagement, because it is difficult to make the audience focus on the video displayed, the character of the interaction is only focused on one goal and must have techniques to provide challenges to the audience so that they are more interested in the video displayed, in presenting the material does not show the best in its presentation, requires equipment that is difficult to reach and complicated.

Learning media that uses audio visual whiteboard animation can affect the level of learning, because students can see real learning objects and make students easy to interpret the learning material presented and make students focus on the material presented. Learning media has several benefits (a). the device can present similarities as those in the environment around them, (b). learning media can make students focus on the learning material presented in the video, (c). learning media can clarify the learning material presented by educators. learning media and whiteboard animation have a relationship, students will understand the material presented more quickly and invite students to follow learning using sound and images.

Various kinds of styles that use whiteboard animation, but there are still many shortcomings found, among others: Students are still focused on seeing the images

presented in the video and they pay less attention to what the explanation is presented, this makes students understand less about the material, when doing exercises students do not pay attention to the questions properly so that there are errors in doing the assignments given. The advantages found by using this learning media are, the device presented can display the material in real time and the content of the video shown is clear. When learning media devices and images can eliminate boredom in learning. The students' sense of challenge becomes strong because they are motivated by what is shown.

Audio visual media is a device that has the characteristics of sound and images, this device has perfect expertise because this device has these characteristics. Audio visual devices have two forms, namely, silent audio visual is a device that can display still images and sounds such as frame films, audio visual is a device that can present images and sounds that can move, for example sound films. Audio visual media has another division, namely, pure audio visual is a device that produces audio visual directly from one object, impure audio visual is a device that produces audio and visual from different devices. Utilizing audio visual media in learning can focus learning interest, increase memory of learning material, provide pleasure in learning, foster motivation for learning enthusiasm, and make grades high. However, in the use of whiteboard animation learning media, various problems were found including, when the teaching and learning process took place there were still students who ignored when the teacher explained the learning material, and there were still students who looked bored during the learning period.

Learning media comes from Latin which is a form of many of the word medium which means "connector" or "referrer". According to the language of the media it is a link from the sender to the person who receives. According to previous researchers Azhar Arsyat in Husniyatus suggested that identifying devices in teaching and learning activities is interpreted by sample media, pictorial, media, in order to store, perform activities and design, concrete and oral news. Learning media is media that is used to support the capture of students in producing knowledge and creativity. Learning media has several characteristics that are commonly found, including the following:

- a. Learning media has the meaning of a form known as hardware (hardware), which is a tool that can be seen, heard and touched with the tools of the five senses.
- b. Learning media has an unreal meaning commonly known as software, which is the content in the hardware that will be conveyed to students.
- c. The concentration of learning devices is on sound and images.
- d. Learning devices have a meaning as a helping medium in the continuity of learning, as well as being in the room or outside the room.
- e. Learning media is utilized as a form of interaction between students and educators.
- f. Learning media can be utilized together such as radio, computer, invokus

and television media, which can be used in groups both large and small, such as soap operas, videos, OHPs, and for individuals such as smartphone tapes, recorders.

Regarding this description, it can be summarized that learning tools are auxiliary media in the learning system and media interaction between educators and students.

Learning media has various types of media and is grouped into four divisions, namely the first division of print technology has characteristics such as: text is read linearly, asking for interaction only focuses on one goal, the appearance obtained is passive, both words and images aim at students, information can be directed and rearranged by the user. The second division is audio-visual technology is generally linear, generally presents the spirit, is used with consequences that have been determined by the stylist, has a theoretical thinking, its main purpose is to parade educators with the ability to direct active learners in the role. The third division is the advantages of computer technology, among others: making opportunities for students to solve problems individually, displaying features that steal the attention of students by displaying various animations, presenting features in diverse learning, making students excited about learning, students can determine the development of learning.

Video is the technology of transmitting electronic signals from a moving image. Video learning can change the thinking of still objects into moving objects and knowledge about cartoons, presenting things whose content can be displayed more clearly and thoroughly. Video-based viewing keeps up with the times by presenting directions slowly and always teaching activities in the classroom. The advantages of using video in learning are some of the advantages found in learning that uses video, as for the following advantages: tracing the content in the video to the learner community in no particular time, low cost and well-controlled use of time so that it presents its own pleasure to the learning process, can be used at any time in learning, the video shown is easy to accept by the learner, can provide excitation for more diverse activities, aspects that use the learner, incorporation of directions from indoors and outdoors, videos are simpler, videos are easy to understand, videos present experiences to learners. The barriers that often occur when using video in learning are as follows:

- a. The problem relates to the teacher's ability to select videos that are appropriate to the learning material.
- a. Problems related to teachers' understanding of the learning steps in using videos to ensure that the videos presented can be displayed in learning.
- b. Teachers' lack of expertise in making videos and their lack of qualifications for learning.
- c. The quality of the video presented is low and the duration of the video is too fast.
- d. Sound quality: the use of loudspeakers that are not good, in recording the sound there is a crowd so that the sound produced is not very clear.
- e. Quality of content that does not fulfill the learning material.

CONCLUSION

The utilization of whiteboard animation applications as video-based learning media at SMK Negeri 1 Jati, which is located on Jalan Raya Mojolebak, Jetis District, Mojokerto Regency, East Java province, in general, has not been fully used by educators who use this application only one, two teachers because of limited knowledge in using technology in the sense that they are still lagging behind in technological advances and the facilities owned by schools are also still very minimal. However, the educators who teach there they agree if they use this application in the learning process because they think that using this application makes it very easy to do learning and easy to condition the students, they will explain the material less, which they simply emphasize or clarify the material displayed on the video, after displaying the video the educator can provide an evaluation to students to strengthen memory and increase understanding of the video displayed, so that students can get satisfactory grades in learning.

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