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Improving the Understanding of the Concept and Motivation of Studying Physics with Learning Video Media in Line Learning in SMA Negeri 1 Belik

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Abstract

This study aims to identify and describe the use of instructional video media in increasing understanding of the concept and motivation of learning physics in online learning at SMA Negeri 1 Belik. The research method used a qualitative research approach with descriptive research type. Data collection tools in this study were based on the results of evaluating the implementation of online learning by researchers and questionnaire on student opinions about the use of physics learning video media in online learning that had been implemented. Based on a questionnaire on students' opinions about physics learning video media for online learning, 81 students gave their opinion about the media that students prefer to understand physics concepts with the following results: 63 students chose learning videos, 11 students chose power point media , and 7 students chose the media in word format. Student opinions about the use of instructional video media are as follows: instructional videos really help understand physics concepts as many as 54 students, give an opinion that learning videos are less helpful for understanding physics concepts by 25 students, and those who give opinions on learning videos do not help understanding physics concepts as much 2 students. Whereas in increasing learning motivation, it can be seen from the results of the opinion polls with the following results: 60 students stated that the learning video was an interesting medium, 16 students stated that the learning video was not interesting, and 5 students stated that the learning video was not interesting. From these results it can be concluded that the instructional video media can improve concept understanding and attract students' motivation to learn physics in online learning at SMA Negeri 1 Belik. In order for the learning outcomes to be as expected, infrastructure is needed in the form of smart devices (smart phones) and a stable internet network.

Keywords: Concept Understanding, Learning Motivation, Instructional Video Media.

1. Introduction

Learning activities are activities carried out by students during learning. According to Nasution (1995), in the modern teaching paradigm, students' activities are prioritized in learning. The learning process will be meaningful if they are actively involved in it. Learning will provide optimal results if students have a high level of activity in participating in learning.

SMA Negeri 1 Belik is a high school located at the southern tip of Pemalang district with some of the students residing in locations that still lack internet networks. This is a major consideration when learning is currently being done from home online. Selection of media to deliver learning material must be accessible to all students without reducing the quality of learning outcomes obtained when compared to learning in schools.

Selection of the right media will determine the success of the learning that takes place so that students are able to understand the material presented. The effectiveness of the media chosen does not only consider the advantages of the media, but also from the users' side, namely teachers and students. Good and effective media must be able to mediate the delivery of learning material and be interesting so as to increase student motivation.

Effective learning can be achieved through the efforts and active roles of teachers and students. Learning that is carried out must be centered on students (student centered learning), in this case students are not as passive objects but as active subjects and the teacher acts as a facilitator. Learning Physics is expected to be more fun so that it changes the notion that Physics is difficult to understand, and there are many formulas.

Online learning limits the meetings between educators and students, so that the explanation of the teacher as an educator cannot always be done directly like when learning in class. This can lead to misconceptions about the material being studied. It takes the right media so that the explanation given by the teacher is not much different from the explanation when learning is in the classroom face-to-face.

Instructional videos are video media that are systematically designed by referring to the applicable curriculum and in their development they apply learning principles so that the program allows students to examine the subject matter more easily and interestingly.

As a learning medium, video has different characteristics from other media, namely: (1) Displaying images with motion and sound simultaneously; (2) Being able to display objects that are impossible to carry in the classroom because they are too big, too small, too complicated, too far away and so on; (3) Be able to shorten the process; (4) Enabling engineering (animation).

While the advantages of instructional video media are: (1) Can stimulate motion effects; (2) Can be given a voice or color; (3) Does not require special skills in presentation; (4) Does not require a dark room in the presentation; (5) Can be played back, pause, and so on.

Instructional video media is a type of audio / visual media that presents good learning messages containing concepts, principles, procedures, knowledge application theory to assist understanding of learning material in the form of images and sounds. There will be an increase in learning achievement after using information technology or learning videos taken from the internet (Noviyanto, Nengsih, & Rosyidatun, 2015). The role of instructional video media as follows: (1) Can attract the attention of students so that it can foster learning motivation; (2) Clarifying the meaning of teaching materials so that they are easily understood by students; (3) Teaching methods are more varied. Students do more learning activities.

Concepts play a major role in the formation of scientific knowledge. A person's ability to master the characteristics or classify objects or events around him requires the ability to master concepts. Dahar defines concept mastery as the student's ability to understand scientific meaning, both theory and application in daily life. Silaban defines concept mastery as the effort that students must make in recording and transferring back some information from a certain subject matter that can be used in solving problems, analyzing, and interpreting certain events. Through the ability to master good physics concepts will help students in solving the problems faced.

Mastery of concepts is one part of cognitive competence. The measurement of concept mastery in this study is the students' cognitive abilities which refer to Bloom's taxonomic indicators refined by Anderson & Krathwohl.

[16] namely C1 (remembering), C2 (understanding), C3 (applying), C4 (analyzing), C5 (evaluating), and C6 (creating).

2. Methodology

This study used descriptive qualitative method. Bogdan and Taylor (in Moeleong, 2007: 4) define a qualitative methodology as a research procedure that produces descriptive data in the form of written words or writings from people and observable behavior. This study focuses on a description that explains the increase in conceptual understanding and motivation to learn physics with instructional video media in online learning at SMA Negeri 1 Belik.

The data in this study were obtained from the results of evaluating the implementation of online learning which was carried out within a certain period of time, the results of a questionnaire filled out by SMA Negeri 1 Belik students during the implementation of online learning, and student activity data during online learning. Data collection was based on the results of the online learning implementation evaluation submitted by the researcher as well as a questionnaire on student opinions about online learning that had been implemented.

As supporting data, the results of the Mid-Semester Assessment (PTS) were used online using one of the Office 365 applications, namely Form. PTS activities can describe the active participation of students from student participation during the implementation of PTS and progress in achievement based on the scores obtained.

3. Results and Discussion

Online learning is a distance learning solution during natural disasters such as the current pandemic due to COVID-19. The government took a policy to carry out distance teaching and learning activities (Learning From Home) to control the development of COVID-19 cases. Online learning is basically learning that is done virtually through available virtual applications. However, online learning must pay attention to the competencies to be taught. Teachers must realize that learning has a very complex nature because it involves pedagogical, psychological, and didactic aspects simultaneously (Mulyasa, 2013: 100). Therefore, online learning does not only contain material that is transferred via the internet, or assignments and questions are sent through applications or social media. Online learning must be planned, implemented, and evaluated as in classroom learning.

Selection of the right media in the learning process plays an important role in producing meaningful learning for students. Media is one of the considerations when a teacher plans the learning process to be carried out. Online learning requires students to learn more independently because of the interaction between fellow students and between students and educators through cyberspace. Therefore we need a media that can be used for communication and a place for various learning activities such as in class.

In the journal Sartika (2018) Rusman argues that: There are five types of media that can be used in learning,

1. Visual Media, is media that can only be seen using the sense of sight which consists of projected media and non-projectable media which are usually still images or moving images.
2. Audio Media, namely media containing messages in auditive form that can stimulate thoughts, feelings, attention, and the willingness of students to learn the language. Examples of this audio medium are sound cassette programs and radio programs.
3. Audio-Visual Media, namely media that is a combination of audio and visual or commonly known as visual-viewing media. Examples of audio-visual media are video / television programs and sound slide programs.
4. Presenter Media Group, this media as expressed by Donald T. Tosti and John R. Ball is grouped into seven types, namely: (a) the first group; graphics, printed materials, and still images, (b) the second group; silent projection media, (c) third group; audio media, (d) the fourth group; audio

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media, (e) fifth group; live image / film media, (f) sixth group; television media, and (g) the seventh group; multimedia.

5. Media objects and interactive media based on computers. Object media is a three-dimensional medium that conveys information not in the form of presentation, but through its own physical characteristics, such as size, shape, weight, structure, color, function, and so on.

Learning video media is a medium that is included in the audio visual group. In online learning, instructional video media can be accessed by students via the YouTube channel so that it can be accessed by students at any time and can be downloaded and studied at any time. The instructional video media made by the researcher contains an explanation of the material along with pictures and applications in life as well as sample questions and discussions with settlement steps such as when learning in class.

Data collection tools in this study were based on the results of evaluating the implementation of online learning by researchers and questionnaire on student opinions about the use of physics learning video media in online learning that had been implemented. Based on a questionnaire on students' opinions about physics learning video media for online learning, 81 students gave their opinion about the media that students prefer to understand physics concepts with the following results: 63 students chose learning videos, 11 students chose power point media , and 7 students chose the media in word format. Student opinions about the use of instructional video media are as follows: instructional videos really help understand physics concepts as many as 54 students, give an opinion that learning videos are less helpful for understanding physics concepts by 25 students, and those who give opinions on learning videos do not help understanding physics concepts as much 2 students. Whereas in increasing learning motivation it can be seen from the results of the opinion polls with the following results: 60 students stated that the learning video was an interesting medium, 16 students stated that the learning video was not interesting, and 5 students stated that the learning video was not interesting

These results can be displayed in the graph as follows:
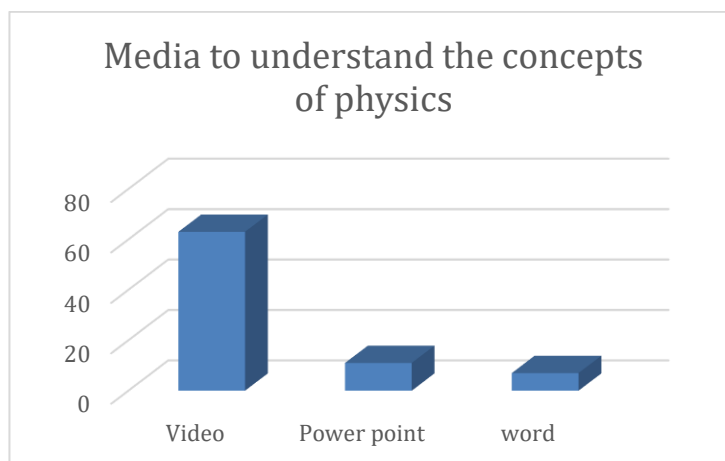
Figure 1. Media Diagram to Understand the Concept of Physics
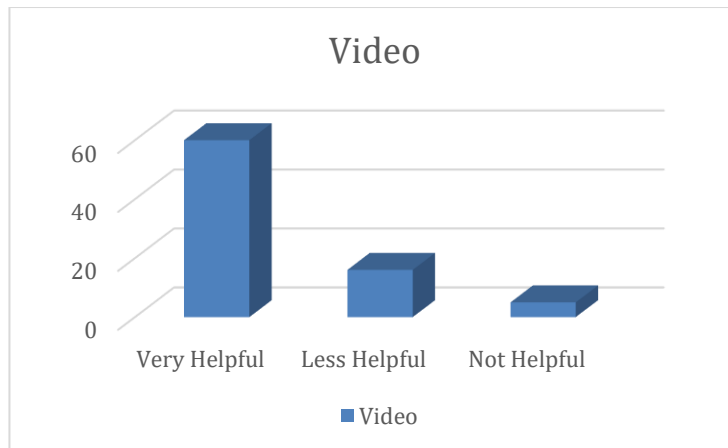
Figure 2. Video Lessons to Understand the Concept of Physics

From the results above, it can be seen that the use of instructional video media can improve understanding of physics concepts and increase the motivation of students to learn physics.

4. Conclusion

Learning video media can be an effective medium for delivering physics learning material in online learning at schools so that learning is more interesting and involves student activities in it. Understanding the concepts in learning physics is very important to master the material being studied. Media that is attractive to students arouses learning motivation so that learning becomes more meaningful for students.

In order for the implementation of online learning to run as expected, it needs infrastructure support in the form of smart devices (smart phones) and a stable internet network.

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