

# The Use of Mathematics Learning Video During the Pandemic Covid-19 at SMA Datuk Ribandang Makassar

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## ABSTRACT

During pandemic Covid-19, every school in Indonesia used a distance learning system online. Teachers are challenged to conduct effective and creative learning processes; one solution is using learning videos. The purpose of this study is to describe the use of mathematics learning video and the student's responses to the use of learning video for learning mathematics during the COVID-19 pandemic. This research uses a descriptive quantitative research method. The population of this research was the students of SMA Datuk Ribandang Makassar. Data of students' responses were collected by using a questionnaire and distributed via a google form. The response assessment included aspects of relative advantage, compatibility, complexity, trialability, and observability. This research indicates the use of learning videos as learning media through three processes: preparation, production, and post-production. The student's responses to learning videos have obtained a score of 3.04, which means good. Students reply to the relative advantage valued 3.04, compatibility valued 3.07, complexity valued 3.09, trialability valued 3.00, and observability valued 3.00, which means every aspect is included in the good category.

**Keywords:** Mathematics, Learning Video, Distance Learning, Pandemic Covid-19.

## 1. INTRODUCTION

The development of technology is very rapid in various sectors, including the education sector. Technological improvements in this era of globalization can be applied to education as more facilitate the learning process. The role of technology in education is increasingly due to the impact of the covid 19 pandemic. The effect of this pandemic requires the online distance learning process. All levels of education adopt a policy for distance learning. Every school and campus around the world, including Indonesia, implements online learning.

Teachers are challenged to streamline online learning and create creative and fun learning. Innovation is needed so that the learning process can attract students' attention and create a pleasant learning atmosphere. The use of learning videos can be a solution in presenting material with audio and visuals that can draw students' attention compared to conventional online learning.

Video is one of the learning media in audio-visual, which is very effective to support the learning process. The benefits of learning videos can be perceived as real as they can reach all learners and are effective as a medium of learning because they can be reproduced, viewed, and repeatedly presented [1].

According to [2], explaining video is a visualization of moving images accompanied by audio or sound to enhance the impression formed into a single unit in the form of a plot. It has a message for a specific purpose. Meanwhile, [3] explains that video is an audio-visual media that display moving images. So it can be concluded that video is one of the media in the form of audio-visual because it can simultaneously display a series of moving images and sound. In addition, the video has a message in it, depending on the content and type of video shown and from the viewer's point of view.

Daryanto in [4] explains the benefits of video media in every aspect, including video media as a

semi-real archive of an event so that one day it can be played back, video media as a projection of human brain memory that can store a number of occasions, video media is flexible because it can be used in every area of life, video media is more accessible to instill concepts and critical thinking than print media such as photos. Furthermore, [1] states that the benefits of video media in the learning process can be perceived as real as it can reach all learners and effective as a medium of learning because it can be reproduced, viewed, and presented repeatedly. [5] added that the benefits of video media can overcome the limitations of time and space and can complement experiences for students when they discuss, read or practice.

Along with the times, videos have become easier to shoot, cut, and edit on a desktop and even on a digital phone. The video can be shot by digital phone or digital camera and load it to youtube that students can freely access. We know that students of whatever age will learn more by using multiple media. The use of video on learning is not just to keep the student's attention, but it must contribute to learning [6].

Multiple studies have shown that video can be a highly effective educational tools ([7]-[11]). This study aims to describe the use of mathematics learning video and the student's responses to the learning video for learning mathematics during the COVID-19 pandemic.

**2. RESEARCH METHOD**

The research method in this study is quantitative with a descriptive approach. The research subjects were 67 students of SMA Datuk Ribandang Makassar who had participated in online mathematics learning with the help of learning video media. The data collection technique used a questionnaire distributed via a google form. The research design was carried out in two stages: (1) Creating several questions that would be asked to students via a google form, (2) collecting and filtering data that had been filled in by students to be analyzed descriptively.

The analysis process is carried out by determining the subject's answer score for each indicator in the questionnaire, which is then analyzed descriptively.

The researcher used a questionnaire with a Likert scale with 4 choices, as shown in the table below:

**Table 1.** The score for each Option

Option	Score
<b>Strongly Agree</b>	4

<b>Agree</b>	3
<b>Disagree</b>	2
<b>Strongly Disagree</b>	1

The scores obtained for each indicator are interpreted based on the following criteria:

**Table 2.** Interpreted Students Response Based on Score

Interval	Students Response
<b>1.00 ≤ x &lt; 1.75</b>	Very Bed
<b>1.75 ≤ x &lt; 2.50</b>	Bad
<b>2.50 ≤ x &lt; 3.25</b>	Good
<b>3.25 ≤ x ≤ 4.00</b>	Very Good

x = Scores of each indicator

**3. RESULT AND DISCUSSION**

Several types of learning videos can be used in learning mathematics, some of which are liner presentation videos, video tutorials, video recordings, and video clips of math songs [12]. The type of video used in this research is a video tutorial, which is a video that displays the steps of solving math problems through recordings of computer screen activities accompanied by the voice of the teaching teacher. The steps taken by the author in implementing learning videos include:

- a. The preparation stage consists of recording the design and materials manuscript, shooting equipment preparation, and determining a shooting schedule.
- b. The production stage is the shooting session. At this stage, the author arranges supporting media, such as microphones, presentation materials, digital cell phone cameras, to record and adjust the lighting in the recording room to optimize the recordings.
- c. The post-production stage is the stage of editing the recording. After the recording process is complete, the author edits the recording using a video editing application.

The distribution of learning videos in learning mathematics was shared via WhatsApp class groups. The respondents' profiles are in the table below:

**Table 3.** Respondent Profile

Respondent Profiles	
<b>Genre</b>	25.37% Male
	74,63% Female
<b>Age</b>	11.94% 15 years old
	79.10% 16 years old
	8.95% 17 years old
<b>Smartphone Ownership</b>	100% have a smartphone

Based on the results of the students answers to the distributed questionnaire regarding the use of learning videos in learning mathematics and referring to the response categories that have been described, the student responses to each indicator are as follows:

**Table 4.** Students' response to the relative advantages

Indicator	Score	Response Category
1.1 The use of Mathematics learning videos in improving students' understanding	3,12	Good
1.2 The use of Mathematics learning videos in clarifying the material presented by the teacher.	3,13	Good
1.3 The use of learning videos in increasing students' independence in learning Mathematics	2,91	Good
1.4 The use of learning videos in overcoming students' learning problems in learning Mathematics	3	Good
<b>Average</b>	<b>3,04</b>	<b>Good</b>

Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes [13].

Student responses to the Relative Advantage obtained from learning videos in learning mathematics are valued at 3.04, which means "good." Overall,

students gave good answers to the use of learning videos to clarify the material presented by the teacher and increase students' understanding of learning mathematics. Indeed, it will have a positive effect on improving students' ability to solve mathematical problems.

This is in line with the [14], the results showed an effect of mathematics learning videos on the e-learning platform on students' mathematical problem-solving abilities. Students who watched the instructional videos had better mathematical problem-solving skills than students who did not watch the instructional videos. Furthermore, [15] found that the average student "agreed" that they learned more in the video tutorials, [11] in his research found that students understand and remember complex concepts much better when they are faced with the visual explanation video.

**Table 5.** Students' response to the Compatibility

Indicator	Score	Response Category
2.1 The image quality of the Mathematics learning videos presented by the teacher	3.07	Good
2.2 The audio quality of the Mathematics learning videos presented by the teacher	3.09	Good
2.3 Video content of Mathematics lessons presented by the teacher	3.09	Good
2.4 Presentation of Mathematics material through learning videos	3.03	Good
<b>Average</b>	<b>3.07</b>	

Compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters [13].

Students' response to Compatibility obtained from learning videos is worth 3.07, which means good. Most of the students liked the quality of the images, audio, content, and presentation of the material in the learning videos presented by the teacher in learning

mathematics. It means that the quality of the learning videos shown is good.

According to [16], a good video has the power to engage deeply and be memorable. It is in line with the research by [17] that video production qualities can directly or indirectly impact learnings outcomes preferred of the length videos or content areas to be. In addition, online videos should be carefully planned to create high-quality, concise videos of less than ten minutes in length yet contain enough educational content.

**Table 6.** Students' response to the complexity

Indicator	Score	Response Category
3.1 Ownership of learning video player (Computer, Laptop, Smartphone, etc.)	3.19	Good
3.2 There are no problems when using learning videos	2.84	Good
3.3 The ability to watch learning videos in multiple places	3.18	Good
3.4 Perceptions of the ease of use of learning videos	3.18	Good
<b>Average</b>	<b>3.09</b>	<b>Good</b>

Complexity is the degree to which an innovation is perceived as challenging to understand and use. Most social system members readily understand some creations; others are more complicated and will be adopted more slowly [13].

Student response to the complexity obtained from learning videos is worth 3.09, which means good. This result shows that the student didn't have any significant difficulties using videos in learning mathematics.

**Table 7.** Students' response to the trialability

Indicator	Score	Response Category
4.1 The student is accustomed to using learning videos	2.97	Good
4.2 Pre-knowledge before using learning videos	2.76	Good

4.3 The independence in using learning videos	3.07	Good
4.4 The ability to try learning videos repeatedly	3.20	Good
<b>Rata-rata</b>	<b>3.00</b>	<b>Good</b>

Trialability is the degree to which an innovation may be experimented with on a limited basis. New ideas that can be tried on the installment plan will generally be adopted more quickly than innovations that are not divisible [13].

Student responses to trialability obtained from learning videos in learning mathematics are valued at 3.07, which means good.

This is in line with research by [10], where four-fifths of the respondents value the repeatability of videos in terms of learning. They also reported that they had had more time to think and understand the content with the video materials. These findings inevitably underpin the usage of the short video method in mathematics and may also encourage replacing some of the course content with video content.

**Table 8.** Students' response to the observability

Indicator	Score	Response Category
5.1 The effect of learning videos in improving students' understanding in learning Mathematics	2.97	Good
5.2 The impact of learning videos in enhancing students' skills in doing math problems	2.90	Good
5.3 The influence of learning videos in supporting the online Mathematics learning process	3.06	Good
5.4 The influence of learning videos in serving the needs of students in learning Mathematics online	3.07	Good
<b>Average</b>	<b>3.00</b>	<b>Good</b>

Observability is the degree to which the results of an innovation are visible to others. The easier it is for individuals to see the results of an innovation, the more likely they are to adopt it [13]. Student response to "observability" obtained from learning videos is worth 3.07, which means "good."

#### 4. CONCLUSION

The result and discussion show that using learning video in learning mathematics during pandemic Covid-19 can be an effective educational tool and a good innovation according to the good responses of students based on the relative advantage, compatibility, complexity, and trial observability.

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