

Journal of Educational Sciences

Journal homepage: https://jes.ejournal.unri.ac.id/index.php/JES



Need Analysis for the Development of Learning Video Based on Explaindio in Physics Lesson of Senior High School to Improve Learning Outcomes During the Covid-19 Pandemic

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ARTICLE INFO

Article history:

Received: 31 Dec 2020 Revised: 16 June 2021 Accepted: 20 June 2021 Published online: 24 July 2021

Keywords:

Need Analysis Explaindio Learning Outcomes Learning Videos

A B S T R A C T

During the Covid-19 pandemic, learning is no longer undertaken offline (outside the network) but online (in the network). This condition demands the informative and communicative media for learning activities. One of the media that can be directly interacting with students is learning video. The teacher needs to conduct a needs analysis to ensure the use of learning videos, especially those based on Explaindio. The research was conducted in a correlational quantitative approach. The action research was undertaken at SMA Negeri 4 Pekanbaru with a sample of 36 students. The data collected from the questionnaire consisted of 10 items. Data analysis by substituting respondents' results through descriptive statistics, Product Moment correlation, and t-test. The results of the analysis indicated that the importance of utilizing meaningful videos to meet the learning needs of students. Learning videos based on Explaindio provide space for teachers to design videos in accordance with their needs. Complete and communicative learning videos can provide meaningful information and experiences to students so that they have a positive impact on student learning progress.

1. Introduction

Learning is a complex process. In its implementation, the various facilities and infrastructure are needed to support the success of learning outcomes. One of these facilities is learning media. Learning media is a means that is able to facilitate teachers and students during the process of teaching and learning activities that have been undertaken. Several existing studies indicate that learning media can be useful if it is used appropriately by teachers when the implementation of learning begins with accuracy in planning, using, and evaluating and the right media can certainly present good learning outcomes

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(Budiyono, 2020; Ekayani, 2017). At the point of this success, the media used as a learning tool must be ensured that the media can be used proficiently by the teacher (Falahudin, 2014).

During the Covid-19 pandemic, learning is no longer undertaken offline (outside the network) but online (in the network) (Zulhafizh, 2020a; Zulhafizh & Permatasari, 2020). This condition demands teachers to think about media that can be used in learning activities. The selected media definitely can facilitate all student learning activities during face-to-face learning activities cannot be implemented. One of the media that can be directly interacting with students is learning video. Students can indirectly interact with the teacher. However, the concept of this video is one way.

The existence of a video enables students to notice the teacher's explanation. Students can measure the speed and slowness of existing explanations, so then it is easier to understand the material or explanation presented. On the other hand, the existence of learning videos has assisted students to repeat explanations when they forget or hesitate (Salmina, 2019; Al-Tabany, 2017). Learning videos that meet learning content standards are certainly very helpful for students in learning (Hamdanillah, Harjono, & Susilawati, 2017). In accordance with this explanation, a teacher needs to conduct a review of the things that need to be done for the manufacture or development of learning media.

A review of the development of learning videos as an initial step before the design is technically undertaken. A teacher can ask students directly or indirectly what they want if a teacher provides a learning video. This learning video is a real teacher representative. Thus, it is in line with this explanation, this article seeks to analyze the need for developing explaindio-based learning videos, especially in physics subjects. The analysis of the need for developing the learning video is an important note for teachers (Ichsan et al, 2018) to create the design. The appropriate design can certainly help and maximize learning activities.

Explaindio itself is a device that can assist teachers in presenting learning videos. This device is easy and interesting to learn. Explaindio has the advantage to be used in presentation activities, promotions, animations, and so on. With these advantages, Explaindio can be used for learning activities, such as: providing learning with an attractive design and appearance, providing learning motivation, it facilitates to create of various illustrations so that learning objectives are directed and can be achieved properly.

In line with its advantages, the use of learning videos based on Explaindio is expected to encourage and motivate students in learning. Motivation can encourage students to act (as movers) and direct students to achieve learning goals (Putri & Isnani, 2015) so that if students have acted as movers or are motivated in learning, they definitely can increase their learning motivation and improve learning outcomes, especially during this Covid-19 pandemic. The development of learning media such as learning videos is an important part to direct students'

enthusiasm for learning. Creative use of explaindio is able to present designs and illustrations that can strengthen knowledge and learning experiences.

2. Methodology

The research was undertaken with a correlational quantitative approach. The study was conducted at SMA Negeri 4 Pekanbaru with a sample of 36 students. Each consisted of 14 men and 22 women. The data used to collect data is in the form of a questionnaire with open ended questions. The results of the analysis of validity and reliability, all data were valid with Cronbach's Alpha 0.746. The questionnaire used was 10 items. The process of data collection by utilizing google forms. Data analysis was undertaken by substituting respondents' results through descriptive statistics, followed by correlation analysis through Product Moment correlation and then t-test. The correlative decision used a significance level between +1.00 and -1.00 refer to Zulhafizh (2020) as in Table 1.

No.	Scale	Category
1	1	Perfect
2	0,75 until 0,99 or -0,75 until -0,99	Very Strong
3	0,50 until 0,75 or -0,50 until -0,75	Strong
4	0,25 until 0,50 or -0,25 until -0,50	Enough
5	0,0 until 0,25 or -0,0 until -0,25	Weak
6	0,00	No Correlation

Table 1. Interpretation of Significance Level

3. Results and Discussion

Finding and Discussion

Demographics

Demographic data from research results can be mapped based on gender, namely male and female. The data can be seen in table 2.

Group	Ν	Percentage
Male	14	38,89
Female	22	61,11
Total	36	100

Table 2. Demographic Distribution Based on Gender

Table 2 can be seen that male respondents consist of 14 people with a percentage of 38.89% and female respondents consist of 22 with a percentage of 61.11%. This implies that there are more female respondents. There are 36 people in total. Each respondent has characteristics in responding to the data analysis, especially if it is associated with gender.

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Descriptive Data

Research data consists of 10 questions. Each question has several alternative answers that vary. This has been adjusted to the pattern or form of the question. The data can be seen in table 3.

No.	Indicator Observation Information Informatio Information Information Information Information Informati		Ν	Percentage
1	How many times doe students look at	1-2 times	9	25,00
	the clock during the learning activity?	3-4 times	19	52,78
	(P1)	5-6 times	4	11,11
		7-8 times	1	2,78
		9-10 times	3	8,33
2	How many times do you leave vicon	1-2 times	22	61,11
	(Video Conference) during teaching	3-4 times	8	22,22
	and learning activity? (P2)	5-6 times	0	0
		7-8 times	4	11,11
		9-10 times	2	5,56
3	Are you happy of learning through	Нарру	8	22,22
	learning video sent by the teacher?	Less Happy	9	25,00
	(P3)	Happy Enough	18	50,00
		Unhappy	1	2,78
4	Are the videos that you ever seen through youtube/other social media	Yes	30	83,33
	help your creativity in learning? (P4)	No	6	16,67
5	Do they help you in answering the	Yes	21	58,33
	critical questions? (P5)	No	15	41,67
6	Can learning video accelerate the comprehension quality when studying?	Yes	18	50,00
	(P6)	No	18	50,00
7	Has the information presented in the	Yes	9	25,00
	video fulfilled the learning purpose?	Sometimes	1	2,78
	(P7)	No	26	72,22
8	Can you acquire the information	Yes	9	25,00
	presented in the learning video? (P8)	Sometimes	25	69,44
		No	2	5,56
9	Can the information in the learning	Yes	21	58,33
	video entertain and help explaining the	Sometimes	14	38,89
	information? (P9)	No	1	2,78
10	Can the display of video content attract	Yes	16	44,44
	your attention to study? (P10)	Sometimes	16	44,44
		No	4	11,11

Table 3. Descriptive Results of Respondents

Table 3 contains ten questions that are the basis for observing the analysis of the need for developing explaindio-based learning videos in Physics subjects to improve learning outcomes during the Covid-19 pandemic. It is known that 25% of P1 choose 1-2 times, 52.8% choose 3-4 times, 11.1% choose 5-6 times, 2.8% choose 7-8 times, and the last is 8.3% who choose 9 -10 times. The percentage results have been obtained, there are 19 students who prefer choose 1-2 times with the highest percentage 52.8% seeing the clock when the learning activity takes

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place; P2 consists of 61.1% and the students choose 1-2 times, 22.2% choose 3-4 times, 11.1% choose 5-6 times, and 5.6% choose 9-10 times. The percentage results obtained are 61.1% with the number of students as many as 22 people who prefer to choose 1-2 times to leave the vicon (video conference) during teaching and learning activities; P3 consists of 22.2% who choose happy, 50% choose quite happy, 25% choose not to be happy, and 2.8% choose not to be happy. Based on the highest percentage, there are 50% of students who choose quite happy, 18 people feel happy to learn through learning videos sent by the teacher.

Furthermore, P4 consists of 83.3% who choose yes and 16.7% choose no. Thus, 83.3% of voters with a total of 30 students who have answered learning videos that viewed through youtube/other social media and it can help creativity in learning; In P5, it has been found that 58.3% choose yes and 41.7% choose no, it can be concluded that 58.3% the highest percentage of 21 people have chosen learning videos to help answer critical questions; In P6, there are 50% with a total of 18 students who answer yes and 50% with a total of 18 students who answer on. This percentage is balanced, concerning to positive questions, 50% of students who answer that learning videos can accelerate the quality of understanding while learning; P7 is obtained 25% and they choose yes, 72.2% choose sometimes, and 2.8% choose no. Based on the most answers, 72.2% with a total of 26 students, it can be concluded that the students assert that sometimes the information presented in the video has fulfilled the learning objectives.

Then, in P8, 25% choose yes, 69.4% choose sometimes, and 5.6% choose no. It can be concluded based on the most answers, namely 69.4%, consists of 25 people and they argue that they could master the information presented in the learning video; P9 obtained 58.3% chose yes, 38.9% chose sometimes, and 2.8% chose no. Based on the highest number of voters, 58.3% with a total of 21 students answered yes that animation in learning videos can entertain and help explain information; P10 obtained 44.4% chose yes, 44.4% chose sometimes, and 11.1% chose no. It can be concluded that there is a balance in the percentage of yes and no answers. Then the positive question category was chosen with 44.4% totaling 16 students answering yes that the video display can attract attention to learning. The diversity of answers is part of the perception data felt by respondents related to the analysis of the need for developing learning videos, in this context based on explaindio.

Contribution of Needs Analysis

Contribution analysis was carried out to see the level of relationship between each question in measuring the level of need for the development of learning videos. The data can be seen in table 4.

No.	Observation Indicator	n	Sig.	Product Moment Correlation	Category
1	P1	36	0,000	0,563**	Strong
2	P2	36	0,000	0,703**	Strong
3	P3	36	0,000	0,483**	Strong
4	P4	36	0,000	0,531**	Strong
5	P5	36	0,000	0,587**	Strong
6	P6	36	0,000	$0,597^{**}$	Strong
7	P7	36	0,000	0,622**	Strong
8	P8	36	0,000	$0,\!548^{**}$	Strong
9	P9	36	0,000	$0,622^{**}$	Strong
10	P10	36	0,000	0,583**	Strong
Mean				0.583	Strong

Table 4. Correlation Distribution

Table 4 shows that all observational variables are correlated with the analysis of the needs for developing instructional videos. Based on the results of the correlation table substitution, it shows that all data are strongly correlated, P1 has a significance of 0.000 with a correlation of 0.563** in the strong category; P2 has a significance of 0.000 with a correlation of 0.703** in the strong category; P3 has a significance of 0.000 with a correlation of 0.483** in the strong category; P4 has a significance of 0.000 with a correlation of 0.531** in the strong category; P5 has a significance of 0.000 with a correlation of 0.587** in the strong category; P6 has a significance of 0.000 with a correlation of 0.597** in the strong category; P7 has a significance of 0.000 with a correlation of 0.622** in the strong category; P8 has a significance of 0.000 with a correlation of 0.548** in the strong category; P9 has a significance of 0.000 with a correlation of 0.622** in the strong category; and P10 has a significance of 0.000 with a correlation of 0.583^{**} in the strong category. When viewed with the mean approach, the correlation value is 0.582 with a strong category, at a significance level of 0.000.

Decision Analysis

After the correlation analysis was carried out, the t-test analysis was continued to ensure that the question data could provide meaningful information for decisions in the development of explaindio-based learning videos, especially in physics learning. The data can be seen in table 5.

No.	Observation Indicator	t	df	Sig.	Mean Difference
1	P1	11,729	35	0,000	2,167
2	P2	9,354	35	0,000	1,667
3	P3	16,243	35	0,000	2,333
4	P4	18,520	35	0,000	1,167
5	P5	17,000	35	0,000	1,417
6	P6	17,748	35	0,000	1,500
7	P7	22,007	35	0,000	1,778
8	P8	20,643	35	0,000	1,806
9	Р9	15,337	35	0,000	1,417
10	P10	14,790	35	0,000	1,667

Table 5. t-Test

Table 5 shows that all data are acceptable as observations of the analysis of the needs for developing learning videos. The data characterized by a significant level is not more than 0.000. This means that there is no difference between one data and another. All data have the same position so that the questionnaire and this data are worthy of being used for making a decision.

Distract

During the Covid-19 pandemic, almost all learning is undertaken online (Zulhafizh, 2020a). Various learning alternatives are carried out so that students can still get information and develop their experience and knowledge. The challenges faced during distance learning include students' attention to the explanations that presented by the teacher. Students who are already bored with the activities they are going through and it contains of unfocused learning activities (Syaparuddin, Meldianus, & Elihami, 2020; Kadir, 2014). This is an important note for teachers so that students can participate in intensive learning during class hours.

Students who have experienced boredom in learning can be known by looking at the clock. Data analysis shows that all students look at the clock when learning activities take place, even up to 9-10 times. Another behavior shown by students is to leave learning activities (video conference). Almost all students have left learning activities. This behavior is a form of diverting his attention to others. This situation illustrates that students are not concentrating or bored in learning (Lamba et al, 2014). Students whose learning concentration is disturbed or bored can have an impact on their learning achievement or success (Aviana & Hidayah, 2015). As students, they need to think of alternatives that can encourage students to continue to give maximum attention to learning.

Learn through Learning Videos

One of the interactive learning media with students is a learning video. The existence of learning videos can bring students to experience and know directly about the various illustrations presented. Students can imitate or imitate what the teacher says. Data analysis shows that only 2.78% are not happy with learning videos and 97.72% are happy with learning videos during the covid-19 pandemic, although the level of enjoyment varies. In the research of Melinda, Degeng, & Kuswandi (2018); Mutia, Adlim, & Halim (2017); Busyaeri, Udin, & Zaenudin (2016) show that learning videos can improve learning achievement and attract the attention of students to stay focused on learning.

This encourages educators to present various learning videos that can facilitate students. In order to complement their curiosity and creativity, they also look at various other means such as youtube or social media. Youtube or social media is part of the platform that can be filled with learning videos. Almost 83.33% of students use this pathway to broaden their horizons. However, videos that created by teachers will certainly be more focused on learning targets and achievements

(Nurseto, 2011; Tafonao, 2018). The teacher can design the video in accordance with the learning framework that has been designed and planned.

Critical Learning and Comprehension

Learning through video can help students be critical of the various problems presented. Students can understand the information in detail according to the capacity of the video. A critical attitude in learning is highly expected during the COVID-19 pandemic (Zulhafizh & Permatasari, 2020). This is due to learning activities are not direct and it demands the independence. Responding to this issue, it is expected that the quality of student learning outcomes will not decrease and can be improved with their respective learning styles. An independent learning attitude followed by high learning motivation can improve learning outcomes (Hendrawan & Sirine, 2017).

The properly designed learning videos can improve the quality of students' comprehension. Data analysis shows 50% of students find it helpful in learning. The explanations in the video are able to accelerate students' comprehension and they are also helped in answering questions in the LKPD (Student Worksheet). As a teacher, you have an important task in presenting interesting and communicative videos so that student learning activities can run well (Nurrohma & Purnomo 2020). Communicative learning videos encourage the students to be more interactive to participate in learning so that they can lead to maximum learning outcomes (Buchner, 2018; Hadijah, 2016).

Fulfillment of Purpose and Information

Learning that implement video, it can meet learning objectives if it is well designed and complete. Before the video is created, the ideal step of the teacher is to map the learning objectives to be achieved. It means that the presentation of information or illustrations in the video cannot be separated from the stated objectives. Most of the existing videos do not meet the learning objectives but are more of a theoretical orientation. Meanwhile, learning aims to provide theoretical and practical information so that students' skills can increase (Sani, 2013).

Besides the learning objectives, the teacher pays attention to, the way to convey the information must be communicative so that students can understand. The choice of diction and speed of delivery are important notes in presenting information. Improper or difficult and fast diction can interfere with students understanding the information conveyed by the teacher through learning videos. Data analysis shows that 69.44% can sometimes understand the information presented and 30.56% can and some cannot understand the information. Teachers must be careful in managing information and the rhythm of information presentation so that the video provides significant benefits and contributions to improve learning outcomes (Hadijah, 2016).

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Grab Attention

Display and icon in learning videos can entertain and attract students' attention in learning. Icons or animations can attract the attention of students up to 58.33%. This situation encourages teachers to design models and animations in the video that are not original but provide illustrations that support the presentation of information. On the other hand, the inappropriate animation can have an impact on the perspective for understanding the information (Mustafa, Hermandra, & Zulhafizh, 2019). It implies that the teacher as the maker and presenter of information can think or make a design before the video is presented to students.

Yunita & Wijayanti (2017) and Araya, Farsani, & Hernández (2016) argue that the display of learning video content can attract students' attention to learn. The current analysis data 44.44% find it interesting with the presentation of learning videos. This emotionally attractive display can direct the perspective of students in learning. As a teacher, you must take this into account in order to motivate students to continue learning so that their learning outcomes can also increase. The existence of good learning motivation helps students in achieving maximum learning outcomes. Thus, various considerations must still be undertaken by the teacher so that the learning videos presented really make a meaningful contribution.

4. Conclusion

Analysis of the need for developing learning videos for physics subjects at SMA during the Covid-19 period is an important part that must be undertaken by the teacher to improve the quality of learning. Learning by utilizing video will be meaningful if it meets the learning needs of students. Explaindio-based learning videos provide space for teachers to design videos according to learning needs. The videos presented are still based on learning objectives that can meet theoretical and practical goals by paying attention to the appearance and rules of communicative language. Complete and communicative learning videos can provide meaningful information and experiences to students so that it can bring a positive impact on student learning progress.

Acknowledgement

I thank all the components who involved in this research. To the supervisors of this research, Dr. Zlirfan, S.Si, M.Si. and Dr. Fakhruddin, M.T., a 12th grade student of SMAN 4 Pekanbaru who voluntarily participated in the success of the research, and also family who always support the implementation of this research.

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How to cite this article:

Nurliana, Zulirfan, & Fakhruddin. (2021). Need Analysis for the Development of Learning Video Based on Explaindio in Physics Lesson of Senior High School to Improve Learning Outcomes During the Covid-19 Pandemic. *Journal of Educational Sciences*, 5(3), 491-501.