

## **Pengaruh Video Pembelajaran terhadap Hasil Belajar Siswa pada Materi Kalor selama Pembelajaran Daring di MAN 1 Parigi**

### **The Effect of Video Instructional on Students' Learning Outcomes in Heat Material During Online Learning at MAN 1 Parigi**

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**Abstrak** Penelitian ini bertujuan untuk mengetahui pengaruh media video pembelajaran terhadap hasil belajar siswa pada materi kalor selama pembelajaran daring. Jenis penelitian ini adalah eksperimen semu (quasi experiment) dengan desain nonequivalent control group. Populasi penelitian ini adalah seluruh siswa kelas XI IPA di MAN 1 Parigi yang berjumlah 47 siswa. Teknik pengambilan sampel yang digunakan adalah purposive sampling, dengan sampel penelitian yaitu kelas XI IPA 1 sebagai kelas eksperimen yang berjumlah 24 siswa dan kelas XI IPA 2 sebagai kelas kontrol yang berjumlah 23 siswa. Instrumen yang digunakan berupa tes hasil belajar dalam bentuk soal pilihan ganda sebanyak 17 butir soal. Data penelitian diolah dan dianalisis menggunakan metode statistik dengan bantuan aplikasi SPSS 16. Hasil penelitian menunjukkan bahwa rata-rata nilai kelas eksperimen lebih tinggi dibandingkan dengan kelas kontrol. Uji hipotesis yang digunakan adalah independent sample t-test dengan taraf signifikansi  $\alpha = 0,05$ . Berdasarkan hasil analisis data, dapat disimpulkan bahwa terdapat pengaruh penggunaan media video pembelajaran terhadap hasil belajar siswa pada materi kalor selama pembelajaran daring di MAN 1 Parigi.

**Kata Kunci** hasil belajar, kalor, video pembelajaran

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**Abstract** This study aims to determine the effect of learning video media on student learning outcomes on heat material during online learning. This research is a Quasi experiment with nonequivalent control group design. The population of this study was the entire class XI IPA MAN 1 Parigi totaling 47 students. The sampling technique used was purposive sampling with the sample of this study was class XI IPA1 as an experimental class totaling 24 students and class XI IPA2 as a control class totaling 23 students. The instrument used was a learning outcome test in the form of multiple choice questions totaling 17 questions. The research data were processed and analyzed using statistical methods with the SPSS 16 application. The learning outcomes obtained showed that the average score of the experimental class was higher than the control class. The hypothesis test used is the independent sample t-test with a real level of  $\alpha = 0.05$ . Based on data analysis, it can be concluded that there is an effect of learning video media on student learning outcomes on heat material during online learning at MAN 1 Parigi.

**Keywords** learning outcomes, heat, learning videos

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## 1. Introduction

Education has an important role in developing, advancing, and increasing the quality and human resources. Education is not only gaining knowledge but there is a process of personal formation and readiness in the future (Halean, Kandowanko, & Goni. 2021). Education is experiencing obstacles in the face-to-face process in schools in 2020 to 2022 caused by covid-19, forcing the education system in the world, including in Indonesia, to do learning from home or online learning (Damayanthi. 2020). This is in line with the statement of the World Health Organization (WHO) which recommends temporarily stopping activities that will potentially cause crowds, so the Indonesian government issued a policy by implementing online learning from home to replace conventional learning that has been done face-to-face (Lestiyawanawati & Widyantoro. 2020).

Facing the teaching and learning process in the pandemic era, the use of technology is an important part. The utilization of technology, especially online classes, requires creativity and instructional considerations (Gunawan, Suranti, & Fathoroni. 2020). The role of technology is needed, because online learning will be difficult without the help of technology. In the implementation of online learning, students can interact with teachers using several applications such as classrooms, video conferences, LMS developed by certain universities, Madrasah E-learning, Zoom or through WhatsApp groups. However, the delivery of the most material is using the whatsapp application (Septantiningtyas. 2018).

During the covid-19 pandemic, the learning process must continue even though students are at home, therefore teachers are required to be creative in delivering learning materials and teachers are also expected to be able to design learning strategies that can attract interest and are not boring for students so that they can improve learning outcomes through different learning experiences. One of the important factors in learning activities is the existence of learning media to attract students' attention. Learning media is a tool that can facilitate communication and make information technology a tool that facilitates the learning process.

The learning media solution that can be used is to utilize information and communication technology in the form of learning video media. In physics, video media is often used to help the learning process because in physics there are many phenomena and events that must be observed by students with the sensory organs to be easily understood. The use of learning video media can stimulate students' learning motivation because there is curiosity about the video displayed (Kirana. 2016), therefore video is one of the solutions that can be used as a learning media for students, especially during the covid-19 Pandemic.

So that researchers are interested in conducting research with the aim of knowing whether or not there is an effect of using learning video media on student learning outcomes on heat material during online learning at MAN 1 Parigi.

## 2. Method

### 1) Types of research

This type of research is a Quasi experiment. This research was conducted in the odd semester of the 2021/2022 academic year. The location of this research is MAN 1 Parigi which is located in Sausu sub-district, Parigi Moutong Regency. The sampling technique used is purposive sampling, which is a sample collection technique with the consideration that students are at the same grade level, taught by the same teacher and homogeneous student academic ability (Sukmadinata. 2011), where the class used is class XI IPA 1 as an experimental class with 24 students and class XI IPA 2 with 23 students as a control class.

### 2) Instrument

The type of instrument used is a multiple choice learning outcome test totaling 17 numbers. This test is to measure student learning outcomes on heat material both before and after applying online learning video media. The test was conducted twice, namely before treatment (pretest) and after treatment (posttest). The research data were processed and analyzed quantitatively (Sugiyono. 2018) using SPSS 16 with statistical tests in the form of normality test (Shapiro-Wilk), homogeneity test (test of homogeneity of variances), hypothesis testing (independent sample t-test) and test of learning outcomes improvement (N-gain test) (Razali & Wah. 2011).

### 3) Hypothesis

The research hypothesis is that there is an effect of using learning video media on student learning outcomes on heat material during online learning at MAN 1 Parigi.

## 3. Result and Discussion

Based on the results of data analysis, there are differences in student learning outcomes between experimental and control classes. The results of the student pretest obtained an average value for the experimental class of 37,00 and the control class of 37,11. The posttest was conducted with the aim of knowing the extent of the influence of learning video media given to the experimental class during online learning on student learning outcomes in heat material. The posttest results obtained on average for the experimental class of 64.96 and the control class of 56.52 can be seen in table 1.

**Table 1.** Description of learning outcome scores of experimental and control classes

Description	pretest		posttest	
	experiment	control	experiment	control
Sample(n)	24	23	24	23
Minimum value	12	12	47	41

Maximum value	59	59	88	76
Average	37,00	37,11	64,96	56,52

Table 1 shows that the average value of students' concept understanding posttest of the experimental class using learning video media on heat material during online learning is higher than the control class which only uses teaching modules during online learning.

Normality testing is carried out, homogeneity on student learning outcomes data which can be seen in the following table:

**Table 2.** Results of posttest normality test of experimental class and control class

Class		Shapiro-Wilk		
		Statistic	df	Sig.
Learning Outcomes	experiment	.934	24	.118
	Control	.916	23	.054

Based on table 2, it can be seen that the sig. The experimental and control classes are greater than or equal to 0.05, namely 0.118 and 0.054. These results state that the posttest learning outcomes data of the experimental class and control class come from a normally distributed data population.

**Table 3.** Results of posttest homogeneity test of experimental class and control class

Levene Statistic	df1	df2	Sig.
.323	1	45	.573

In table 3, it can be seen that the significance value of the posttest of the experimental class and control class is 0.573 greater than 0.05 so that based on the decision-making criteria that the data obtained comes from a homogeneous population or has the same variance.

After fulfilling the conditions that the data is normally distributed and comes from a homogeneous variance, the t-test can be carried out. This test is carried out to ascertain whether the hypothesis can be accepted or not. The t-test carried out is the independent sample t-test which can be seen in the following table:

**Table 4.** Hypothesis test results of experimental and control classes

Pretest	Mean	Std.deviasi	Df	t.hitung	t.tabel	Sig 2 tailed
Experiment	64,96	12,811	45	2,339	2,014	0,024
Control	56,52	11,874				

Based on table 4, it can be seen that the ttable value obtained is  $2.014 \leq t_{count}$  of 2.339 and the 2 tailed sig value obtained is  $< 0.05$ , which is 0.024 so that these results indicate that the tcount value and 2 tailed sig value are outside the  $H_0$  acceptance area, thus  $H_0$  is rejected and  $H_1$  is accepted (Widianto. 2010).

In addition, the test of the increase in test results to see the increase in student learning outcomes in the experimental class and control class can be seen in table 5 below:

**Table 5.** Test results of learning outcomes improvement (N-gain test)

Class	N-Gain (%)			Category
	Minimum	Maximum	Average	
Experiment	33,80	70,73	46,09	Less Effective
Control	20,34	48,94	31,37	Not Effective

Based on the calculation results, the average N-Gain score for the experimental class obtained an N-gain of 46.09% and in the control class obtained an N-Gain score of 31.37%. The experimental class is included in the less effective category. Both classes experienced an increase, but a greater increase occurred in the experimental class. This is thought to be due to treatment using different learning media, namely in the experimental class given treatment using learning video media.

Video is the most appropriate and accurate learning media in delivering messages and will greatly help understanding and can improve student learning outcomes (Yudianto. 2017). Video media is media that has sound elements and image elements that can be seen, for example video recordings, slides, sounds and so on. Video plays an important role in the educational process, especially when used in the teaching and learning process, this video media provides a lot of stimulus to students because it is sound and image (Sanjaya. 2012). While the control class was given treatment using teaching materials in the form of modules resulting in students feeling bored so that they obtained cognitive abilities that were still low.

Learning using video media in physics lessons is the second subject that uses video as a learning medium after the subject of Islamic Culture History at MAN 1 Parigi so that students are no longer rigid in the learning process. While learning in the control class in the form of providing teaching materials in the form of modules is most often done by most teachers when learning is done online at MAN 1 Parigi.

This research is in line with research conducted by Machfud (2021) that the use of video media in learning was effective and had a positive impact during the Covid-19 pandemic, learning using video media at SMP Negeri 2 Tarakan has gone well. The majority of educators consider that video media is effective to use, which can help educators to teach difficult material with material that requires practical activities. Teaching and learning activities using video media are also favored by students because they can learn from home, and motivate students to learn. So that learning video media is a solution for students so that they can learn from home during the Covid-19 pandemic.

The research was conducted during the Covid-19 pandemic so that there were several obstacles obtained during the learning process. The obstacles faced by researchers during the implementation of research using learning video media are cellular signals or problematic internet connections. Network problems are problems that are often and most complained about during the implementation of learning during the Covid-19 pandemic

(Sadikin & Hamidah. 2020). In addition, slow mobile phones are also an obstacle to the implementation of learning.

Through various types of learning media, teachers are expected to innovate more so that they can improve student learning outcomes through learning experiences that are different from usual. So that educators must always make innovations or create an atmosphere in the teaching and learning process by making learning media that is very interesting and can raise the enthusiasm of students in participating in the learning process. Therefore, learning video media is proven to be able to improve student learning outcomes, especially in class XI IPA1 students at MAN 1 Parigi on heat material.

#### **4. Conclusion**

Based on the data analysis that has been done, it can be concluded that there is an effect of using learning video media on student learning outcomes on heat material during online learning at MAN 1 Parigi. This can be seen from the results of the statistical data analysis of the independent sample t-test test which obtained a ttable value of  $2.014 \leq t_{count} 2.339$  and a 2 tailed sig value of  $0.024 < 0.05$  so that  $H_0$  is rejected. During the learning process, the researcher suggests that the making of learning video media can be presented in a more interesting form aimed at other materials and for all teachers to be able to utilize video media as a solution when learning cannot be done directly. The implications of this research are expected to help students in improving student learning outcomes.

#### **REFERENCES**

- Damayanthi, A. (2020). Efektivitas pembelajaran daring di masa pandemi COVID-19 pada perguruan tinggi keagamaan Katolik. *Jurnal Educational Technology*, 19(3).
- Gunawan, N. M., Suranti, & Fathoroni. (2020). Variations of models and learning platforms for prospective teachers during the COVID-19 pandemic period. *Indonesian Journal of Teacher Education*, 1(2).
- Halean, S., Kandowangko, N., & Goni, S. Y. (2021). Peranan pendidikan dalam meningkatkan sumber daya manusia di SMA Negeri 1 Tampan Amma di Talaud. *Jurnal Holistik*, 14(2).
- Kirana, M. (2016). The use of audio visual to improve listening. *English Education Journal*, 7(2).
- Lestiyawati, R., & Widyantoro, A. (2020). Strategies and problems faced by Indonesian teachers in conducting e-learning system during COVID-19 outbreak. *CLLiENT Journal*, 2(1).

- Machfud, M. (2021). Efektivitas penggunaan media video pembelajaran di SMP Negeri 2 Tarakan pada masa pandemi COVID-19. *Jurnal Inovasi Pendidikan Berbantuan Teknologi*, 1(3).
- Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors, and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics*, 2(2).
- Sadikin, A., & Hamidah, A. (2020). Pembelajaran daring di tengah wabah COVID-19: Online learning in the middle of the COVID-19 pandemic. *Biodik*, 6(2).
- Sanjaya, W. (2012). *Media komunikasi pembelajaran*. Jakarta: Kencana.
- Septantiningtyas, N. (2018). Pengaruh penerapan media pembelajaran jarak jauh dengan aplikasi Google Classroom terhadap hasil belajar mahasiswa. *Edureligia: Jurnal Pendidikan Agama Islam*, 2(2).
- Sugiyono. (2018). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta.
- Sukmadinata, N. S. (2011). *Metode penelitian pendidikan*. Bandung: Remaja Rosdakarya.
- Widianto, J. (2010). SPSS for Windows untuk analisis data statistik dan penelitian. Dalam *Seminar Nasional Pendidikan*.
- Yudianto, A. (2017). Penerapan video sebagai media pembelajaran. Dalam *Seminar Nasional Pendidikan*.