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The Influence of Animation Media on Students' Understanding of the Human Digestive System Concepts

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Abstract

This research was conducted based on the findings in the field that science learning is still not optimal because the selection of learning media used by teachers is less varied, especially on the material of the human digestive system which has abstract material so that it affects students' concept understanding. The purpose of this study was to determine how the influence of animation media to improve concept understanding on the material of the human digestive system. This research used *pre-experiment* method with *One Group Pretest-Posttest Design* research design. To find out how the effect, the *Paired Samples T-Test* and *N-Gain* test were conducted. The results obtained from the *Paired Samples T-Test* test showed that H_0 was rejected and H_a was accepted with a significance level (sig.) 0.000 (*p value* <0.05) then the results of the *N-Gain* test obtained a value of 66% including in the category quite effective. Based on this explanation, it can be concluded that learning through the use of animated media in this study has a significant effect on students' concept understanding in learning, which means that the animated media is indeed appropriate for use in IPAS lessons on human digestive system material.

Keywords: learning media, animation media, concept understanding, human digestive system.

Abstrak

Sekolah sebagai lembaga pendidikan memiliki peran penting dalam peningkatan kesadaran keberagaman dalam bingkai bhineka Tunggal ika. Pengintegrasian pendidikan dengan kesadaran keberagaman bhineka tunggal ika bisa dilakukan melalui media pembelajaran lagu kreasi "Kita Beragam" yang diciptakan guru. Penelitian bertujuan untuk mendeskripsikan tentang penggunaan media lagu dalam pembelajaran pendidikan pancasila dan kewarganegaraan untuk meningkatkan kesadaran keberagaman yang ada di masyarakat atau lingkungan sekitar dalam bingkai bhineka tunggal ika. Penelitian ini menggunakan pendekatan kualitatif yang bersifat deskriptif. Teknik pengumpulan data yang digunakan dalam penelitian ini menggunakan beberapa cara, yakni observasi, wawancara, dan dokumentasi. Objek penelitian ini adalah 22 peserta didik kelas II SD Muhammadiyah 41 Kayu Putih Jakarta Timur. Penelitian ini dapat menjadi rujukan dalam penggunaan media lagu untuk meningkatkan pembelajaran Pendidikan Pancasila dan Kewarganegaraan terutama tema keberagaman untuk diterapkan kepada peserta didik dari sebelumnya yang hanya menggunakan media belajar yang konvensional sehingga siswa cenderung monoton dan kaku, serta siswa kurang dan kurang memperhatikan dalam mengikuti proses pembelajaran. Sehingga dalam proses pembelajaran yang menyenangkan dengan menggunakan media lagu kreasi ciptaan guru siswa dapat memahami tentang pelajaran yang di berikan oleh guru dengan mudah sehingga dapat meningkatkan hasil belajar siswa dan tujuan pembelajaran pun tercapai..

Kata kunci: media lagu, pembelajaran PPKN, keberagaman, bhineka tunggal ika.

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INTRODUCTION

In elementary school education, one of the important subjects taught is Natural Sciences (IPA). Through this science learning, students can understand various aspects of life in the universe. The material studied includes various natural phenomena, both in the form of events and facts, so that humans can understand natural phenomena that occur, both from themselves and the surrounding environment. *Science* is a science that has a very close relationship with human life. Every aspect of human life, such as the human body, environment, medicine, agriculture, fisheries, and so on, is interrelated with science (Sujana & Jayadinata, 2018) .

Students in elementary school tend to still think concretely. Some science materials, such as material on the human digestive system, have an abstract nature. Therefore, the use of learning media is needed so that students do not misinterpret it. (Maisarah et al., 2023) . To facilitate elementary school students' understanding of abstract science material, the use of learning media is very important. Science learning media is expected to be able to change abstract material to be more concrete so that it can reduce misunderstandings among elementary school students. One approach is to use digital media that utilizes technology to illustrate material with a combination of attractive images and text, so that students can visualize these concepts in real terms.

Science learning material about the human digestive system discusses how the digestive organs work to process food into nutrients that can be absorbed by the body and converted into energy. This concept is often difficult for students to understand because they find it difficult to imagine the process in real life. Learning in the classroom will be more meaningful if students are able to observe the process of human digestion directly, but of course this is very difficult and not possible. In research conducted by (Indrajatun & Desstya, 2022) students often face difficulties in understanding the concept of digestive organs, which can hinder the achievement of optimal learning outcomes. Therefore, it is necessary to use learning media that can overcome this challenge, such as technology-based media that is innovative and attractive to students.

Based on the findings in one of the State Elementary Schools in Tanjungsari Sumedang District, it was found that the use of learning media in learning always adapts to the material but students often feel bored if learning only uses textbooks, especially especially on the material of the human digestive system (Nurdiana et al., 2021) . The material of the human digestive system can be said to be abstract and requires appropriate media to explain how the real picture of the human digestive process in the stomach. Because if the material is delivered using only image media without a real picture, students will find it difficult to understand and know how the human digestive process in the stomach so that what happens is that students will experience misconceptions that will affect their understanding of the concept.

Understanding the concept gives students an understanding of the material that is being taught not just memorization, but more than that students can better understand the concept of the material being conveyed by the teacher (Ari & Ira Restu, 2021) .

Media in the context of education has a very important role in determining the success of the teaching and learning process. The existence of learning media has a direct influence on the dynamics of student learning. Some examples of technology-based learning media are videos, included in the category of two-dimensional *audio-visual* media that move according to the storyline (Siregar & Sukmawarti, 2022) . *Audio-visual* media has a strong visual impact in delivering learning materials. Learning media in the form of animated videos is a collection of moving objects that continuously interact to provide knowledge, arouse feelings, and stimulate learning actions. This type of media effectively shows improved results in student understanding.

Science learning animation videos that use sketches of humans, animals, plants, buildings, as well as verbal and nonverbal writing, are learning media that are expected to

facilitate the learning process. Animated video media also aims to increase student interest to be more involved in learning and achieve learning outcomes in accordance with standard learning objectives

The learning process is considered effective and successful if it can utilize facilities and infrastructure properly and use appropriate methods and strategies in time management, including in utilizing learning resources (Ali et al., 2023) . In the current condition, the utilization of video learning media is needed by teachers so that the learning process can be carried out more easily. Media utilization in learning activities is certainly very important for teachers to support the learning process because it can increase students' attractiveness and interest in learning so that the level of student understanding can increase. The process of understanding a learning material can also increase student achievement for the better (Dewi & Handayani, 2021) .

Based on research conducted by (Aini et al., 2021) this study shows that the use of video animation media has a positive and more significant effect on student learning outcomes compared to the use of *PowerPoint* media. In addition, it can be concluded that students who learn through animated video media experience improved learning outcomes. Similar research was also conducted by (Nurdiana et al., 2021) who developed *Kinemaster-based* animated learning video media to increase understanding in science subjects for grade V students, the results of his research showed that the development of animated learning videos in science subjects with force and motion material can increase student understanding of the material

As for some of the advantages of using animated video media in learning, namely the delivery of material using animated video is more communicative, the material presented using images and animation is easier for students to understand than information made by reading and using only images is sometimes difficult to understand, images of objects in the video are more flexible and look like real, animated video media can be accessed anywhere, of course outside of school students can learn independently, then animated video media is also easy to make and modify, the use of learning media has the aim of motivating students in the learning process so that students can see and hear and receive the same information together (Riana Aprianti et al., 2014)., 2023) .

In addition, learning media has an important role in conveying material in order to achieve the desired goals. By using animated video media, students are expected to get real experiences that make it easier for them to understand the material provided. In addition, learning media should also be able to stimulate students to remember the material that has been learned and provide learning motivation. Effective media will make students active in providing feedback and responses, and encourage active participation in the learning process (Juhardi & Amirullah, 2022) . Based on the findings of this study, the researcher intends to conduct research with the title "The Effect of Animated Media on the Understanding of the Concept of Grade V Students of Human Digestive System Material".

RESEARCH METHODS

The method used in this research is *pre-experiment* method with *One Group Pretest-Posttest Design*. This study aims to determine whether there is an effect of using animated video media on students' understanding of concepts in science subjects. This study will test whether the use of video media can improve students' understanding of concepts compared to conventional learning methods (Sihombing, 2022)

This study is important to determine the effectiveness of video animation media as a learning tool and to provide recommendations that can improve the quality of the teaching and learning process. In this design, students are given a description test that includes *pretest* and *posttest* questions to measure their concept understanding. The *pretest* is conducted before the *treatment*, while the *posttest* is conducted after the use of animated video media in

learning activities. *The One Group Pretest Posttest Design* scheme according to (Sugiyono, 2022a) is presented in Table 1 below:

Table 1. Schematic of *One Group Pretest Posttest Design*

Pre Test	*Treatment*	*Post Test*
T_1	*X*	T_2

Description:
T_1: *Pretest* conducted before treatment.
X : *Treatment* in the form of giving animated media (animated video)
T_2: The final test (*Posttest*) was conducted after the treatment.

The sample in this study involved one class. The sample is part of the population and the characteristics possessed by the population (Sugiyono, 2022a) . The sample in this study was grade V students consisting of 30 people, with 14 male students and 16 female students. The research was conducted in one of the State Elementary Schools located in Tanjungsari District, Sumedang Regency, West Java.

The data collection technique in this study began with an interview with the fifth grade teacher to obtain initial information about the school, students and learning activities. Furthermore, *pretests* and *posttests* were carried out in the form of IPAS learning description test questions with human digestive system material consisting of 10 questions. After the data is obtained, the data is processed using the normality prerequisite test. The normality test used was the *Shapiro-Wilk* test because the research sample was less than 50 (fifty) (Setyawan, 2021) . Statistical analysis was carried out by looking at the significance value of the *Shapiro-Wilk* test at the 0.05 significance level. Data is considered normally distributed if the significance value (sig.) > 0.05 (Sugiyono, 2022b) .

The test of students' concept understanding was obtained from the results of the *pretest* and *posttest* which consisted of 10 questions. *The pretest* was conducted before the learning process using animated media on the material of the human digestive system, aiming to determine the initial ability of students' concept understanding. While the *posttest* was conducted after the learning process with animated media to find out whether students' concept understanding increased or not after learning activities.

The test questions refer to the seven indicators of concept understanding according to *Anderson & Krathwohl* in (Erina Susanti et al., 2021) which are presented in table 2 below:

Table 2. Indicator of Concept Understanding

No.	Indicator	Sub Indicators
1.	*Interpreting*	Interpret the concept with his/her knowledge.
2.	*Exemplifying*	Provide an example of a concept.
3.	*Classifying*	Classify an object based on certain characteristics.
4.	*Summarizing*	Summarize a concept
5.	*Inferring*	Draw conclusions from a concept
6.	*Comparing*	Comparing two or more concepts.
7.	*Explaining*	Explaining a concept.

Before the questions are given to students, the *pretest* and *posttest* questions have gone through the validation stage with the question validity test. After the validity test and reliability test, item analysis is also carried out. This item analysis aims to find out information about a question, to identify good questions, bad questions, and to find out which questions are not good. First, test the difficulty level of the question. A good question is a question that is not too easy and not too difficult (Sugiyono, 2022a) . Questions that are too easy will not stimulate students' ability to solve the problem. Conversely, questions that are

too difficult will discourage students and discourage them from trying again. After that, the question differentiator test is carried out, the differentiating power of the question is the ability of a question to distinguish between high-ability and low-ability students (Sugiyono, 2022a)

RESULTS

The *pretest* and *posttest* were conducted from May 25, 2024 to May 28, 2024. The test was attended by 30 students in one of the elementary schools located in Tanjungsari District, Sumedang Regency, West Java. The form of questions given to students is a description question totaling 10 questions.

Data on the initial test scores (*pretest*) and final test (*posttest*) were obtained to measure students' concept understanding of human digestive system material using animated media. *The pretest* was conducted before the learning process using animated media on human digestive system material, aiming to determine the initial ability of students' concept understanding. Meanwhile, the *posttest* was conducted after the learning process with animated media to find out whether students' concept understanding increased or not after learning activities.

After the *pretest* and *posttest* data are processed, descriptive statistics are obtained which include maximum value, minimum value, average, and standard deviation. Below is the data from the *pretest* and *posttest* results presented in table 3 below:

Table 3. Descriptive Statistics of *Pretest* and *Posttest* Data Concept Understanding

Variables	N	Minimum Value	Maximum Value	Average *(Mean)*	*Std. Deviation*
Pretest	30	33	85	58.63	10.931
Posttest		71	100	85.70	7.936

Based on the results of the table above, it can be seen that the initial test scores (*pretest*) and the final test (*posttest*) were obtained to measure students' concept understanding on human digestive system material. The highest *pretest* score was 85, while the lowest score was 33. For the *posttest* score, the highest score was 100 and the lowest score was 71. From table 4, it can be seen that the average pretest score was 58.63, while the average posttest score was 85.70. This shows a significant increase when using animated media. To find out more about the improvement of students' concept understanding on digestive system material using animated media, it is continued with the normality test as a prerequisite for the next test, namely the homogeneity test, *paired samples t-test*, and n-gain test. Below is presented in table 4 the results of the normality test:

Table 4. Normality Test Results of Students' Concept Understanding

Test of Normality			
Results	**Statistic**	**df**	**Sig.**
Pretest	0,967	30	0,469
Posttest	0,955	30	0,229

Based on table 6, the results of the normality test for students' concept understanding state that the *pretest* obtained a significance value of 0.469 and the *posttest* obtained a significance value of 0.229. Both obtained a significance value of more than 0.05, therefore H_0 is accepted, which means that both values indicate that the data is normally distributed. Based on the normality test, the *pretest* and *posttest* scores are normally distributed. The analysis then continued with the homogeneity test between *pretest* and *posttest* scores, which is presented in table 5 below

Table 5. Homogeneity Test Results of Students' Concept Understanding

Test of Homogeneity of Variances			
Levene Statistic	**df1**	**df2**	**Sig.**
1.932	1	58	0,170

Based on the table above, the results of the homogeneity test of students' concept understanding state that a significance value of 0.170 is obtained, where the significance value is more than 0.05, it can be concluded that students come from a population that has the same variance or the class is homogeneous. Data on *pretest* and *posttest* scores that are normally distributed and have homogeneous variances will then be tested using the *paired sampels t-test.* The t-test results can be presented in table 6 below:

Table 6: T-test results of students' concept understanding

Paired Samples Test								
Paired Differences								
	Average	**Std. Deviation**	**Std. Error Mean**	**95% Confidence Interval of the Difference**		**t**	**df**	**Sig. (2-tailed)**
				Lower	**Upper**			
Pretest and *Posttest*	-27,067	9,548	1,743	-30,632	-23.501	-15,527	29	.000

Based on the t-test results of students' concept understanding presented in table 8, it can be seen that t count is -15.527 with a significance level (sig.) of 0.000 (*p value* <0.05). This means that H_0 is rejected, or the two population means are not identical (the average *pretest* and *posttest* scores are significantly different). Thus, it can be concluded that there is an average difference between the *pretest* and *posttest* scores before and after the use of animated video media. This shows that the media is appropriate for use in learning to improve students' concept understanding in IPAS lessons, especially in the material of the human digestive system. The use of animated video media is one of the alternative media in science learning, as evidenced by the results of the data processing above, which means that animated video media is more attractive to students so that it can improve the quality of learning and student scores (Sihombing, 2022) .

After conducting the t-test, it is continued with the *N-Gain* test to see how much influence the animated video media has and how effective the use of animated video media in the classroom in learning IPAS class V. The following are the results of the *N-Gain* test presented in table 7 below:

Table 7. *N-Gain* test results

	N	**Minimum Value**	**Maximum Value**	**Average**	**Standard Deviation**
Ngain_Score	30	0.26	1.00	0.6644	0.17806
Ngain_Percent	30	25.64	100.00	66.4392	17.80601
Valid N (listwise)	30				

Based on the results of the *N-Gain* test calculations presented in table 9, the average *N-Gain* score obtained is 0.66 in the medium category. Meanwhile, the average *N-Gain* percent is 66%, which means it falls into the moderately effective category. From the results of the data obtained, it can be concluded that the use of animated video media is quite effective in IPAS learning in class V on the material of the human digestive system.

DISCUSSION

The results of the first data analysis show that the use of animated video media has increased significantly seen from the acquisition of the average value of the *pretest* and *posttest* results of students' understanding of the concepts given. Therefore, the use of

animated video media has a significant effect on the understanding of the concept of grade V students on the material of the human digestive system (Junianti & Ismail, 2024) .

The results of the second data analysis showed that there was an average difference between the *pretest* and *posttest* scores before and after the use of animated video media. It can be concluded that animated video media does have a positive effect and is appropriate for use in learning to improve students' concept understanding (Simatupang et al., 2022) . The results of student responses at the time of research in the field during learning in the classroom, students felt happy and certainly more active when shown the explanation of the material through animated video media. Students revealed that learning by using animated video media made them feel more enthusiastic and easy to understand in receiving learning material, especially human digestive system material. The following is an image of the animated video media presented in Figure 1 below:

Figure 1. Animated Video Media of the Human Digestive System

The implementation of animated video media in IPAS learning received a positive response from students because it was felt that the presentation of the material became more interactive and interesting in its use (Fauziah et al., 2023) . There are several aspects of student assessment of the use of animated video media in learning including: First, in the aspect of presentation of material and learning, students said the language used in the animated video media was easy to understand, the material presented in the animated video media was clear and easy to understand, the text listed on the animated video media could be read clearly. Second, in the aspect of display presentation, students said the animation used in the media was interesting, the sound or *backsound* was clear so that the video attracted attention and was not distracting, the design used in the animated video media attracted attention and was not boring. Furthermore, the last in the aspect of the benefits of students said that the animated media displayed helped understand and remember the concept of the human digestive system, animated video media was easy to use and could be watched anywhere.

In addition to the assessment from students, there is also an assessment from the teacher of the animated video media through interviews. The first assessment regarding the feasibility aspect of the material, the teacher said that the Learning Outcomes (CP) and Learning Objectives (TP) contained in the media were appropriate because in CP IPAS class V regarding the human organ system then in this media discusses the human digestive system which is associated again with how to maintain the health of its organs it is very much in accordance with the media that has been developed. The media developed has also contained

very complete material from beginning to end, starting from the introduction of human digestive organs, the functions of human digestive organs, the process of human digestion, then the end of the video is also given ways to maintain the digestive organs. In the teacher's opinion, the animated video media has presented material that contains context according to students' lives because it starts with a real situation that begins with an animation of a small child who is chatting, as if students enter the video as if they are brought into their world. The language used in the animated video media is easy to understand because it uses everyday language which means it is not too formal but not too free either so it is very easy to understand, especially by students. Then the text contained in the media is of a good enough size so that when displayed on the *projector* it can be read clearly. From the results of the interview with the fifth grade homeroom teacher, it can be concluded that the material contained in the media is complete in accordance with the CP and TP, the language used is easy to understand, and the readability of the text on the media is also clearly legible.

Furthermore, the assessment on the media feasibility aspect, the teacher said that the display in the media is also very interesting because with the help of animation it adds to the attractiveness of the media itself plus using bright colors in the media so that it is suitable for elementary school students because most students like such media. The flow of material presented on the media is consistent and related to each other from beginning to end. The material presented is not too fast and not too slow. Then the use of animations used in the media is very interesting because it makes students understand that the flow of food digestion starts from the mouth then moves to the next organ until the last stops at the anus. In contrast to only seeing pictures from books that do not move, students will not know what the real picture of the flow of the human digestive system looks like. The teacher said that the media developed made it easier for students to understand the material. In the teacher's opinion, the design used in the media is of very clear quality and attracts attention so that it makes it easier for students to understand the material on the human digestive system. After that, the *backsound* used is also interesting and not disturbing, making the animation media comfortable for students to watch. The use of this animated video media is very easy because most students are familiar with the *YouTube* application, making it easier for students to access it directly at school or at their respective homes.

From the results of the interview with the homeroom teacher V, it can be concluded that overall the animated media that has been developed is very good, especially in the material of the human digestive system where the material is abstract so that it needs an explanation with a real picture of how the digestive process occurs in the stomach. The solution to developing this animated media is certainly very good and beneficial for students, especially for increasing student understanding.

Then based on the results of the last data analysis, it shows that the use of animated video media is quite effective in the classroom and has a significant positive influence on the learning process. This media helps students understand the concept of the material better and has a positive impact on the results of students' concept understanding (Nazilah et al., 2022) .

CONCLUSION

The conclusion from the results of the study is that the use of animated media on students' concept understanding of human digestive system material in class V has increased. This is evidenced by the results of the *paired sampels t-test* which states that the significance value (sig.) obtained is 0.000 (*p value* <0.05). This shows that there is a difference in the average *pretest* and *posttest* scores before and after the use of animated video media.

Thus, this animation media is indeed appropriate to be used in learning to improve students' concept understanding in IPAS lessons, especially on the material of the human digestive system. In addition, it is supported by data from the *N-Gain* test, the average value obtained is 66% with a fairly effective category. From the results of the acquisition of these

data, it can also be concluded that the use of animated video media is proven to be quite effective in learning IPAS in class V on the material of the human digestive system.

ADVICE

Based on the conclusions and results of the research that has been conducted, the researcher provides suggestions to improve the quality of further learning as follows:

1. For students who have received teaching using animated video media, the use of this media is intended to facilitate their understanding of abstract learning materials such as human digestive system material, it is expected to improve their concept understanding.
2. For schools, researchers hope that the learning process using animated videos runs optimally by paying attention to learning facilities and infrastructure.
3. For teachers, researchers hope that teachers can develop their knowledge and insights through the use of animated video media. Thus, learning objectives can be achieved as expected.
4. For further research, it is recommended to use and develop more creative and innovative animation media. Then for the use of animated media in learning requires the help of other media to add good results and to increase student learning outcomes such as the help of models and learning methods that are interesting to students

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REFERENCES

Aini, N., Zuliani, R., & Rini, C. P. (2021). The Effect of Animated Video Media on Science Learning Outcomes of Iv Grade Students Sdn 20 Pagi East Jakarta. *NUSANTARA: Journal of Education and Social Sciences*,*3* (3), 417-426. https://ejournal.stitpn.ac.id/index.php/nusantara

Ali, H. E. Y., SS, M., & Saputra, H. Y. M. (2023). *Learning Planning in Elementary School*. Indonesia Emas Group. https://books.google.co.id/books?id=innrEAAAQBAJ

Ari, F., & Ira Restu, K. (2021). Mathematical Concept Understanding Ability in View of the Learning Style Tendencies of Grade IV Elementary School Students in Sumedang Regency. *Dikoda Journal*, *2*(2), 33–41.

Dewi, F. F., & Handayani, S. L. (2021). Development of Powtoon Application-Based En-Alter Sources Animated Video Learning Media for Elementary School Alternative Energy Sources Material. *Basicedu Journal*,*5* (4), 2530-2540. https://jbasic.org/index.php/basicedu/article/view/1229

Erina Susanti, N. K., Asrin, A., & Khair, B. N. (2021). Analysis of the Level of Understanding of Science Concepts of Grade V Students of SDN Gugus V Cakranegara District. *Scientific Journal of Education Profession*,*6* (4), 686-690. https://doi.org/10.29303/jipp.v6i4.317

Fauziah, A. N., Andes, D., Oktaviani, S. D., & Aeni, A. N. (2023). Utilization of Digital Shelf as Online Library in Islamic Leadership for Elementary School Children. *JIE (Journal of Islamic Education)*,*8* (1), 1-17. https://doi.org/10.52615/jie.v8i1.255

Indrajatun, D. A. R., & Desstya, A. (2022). Misconception Analysis of Human Digestive System Material Using Certainty of Response Index in Elementary School. *Basicedu Journal*,*6* (4), 6345-6353. https://doi.org/10.31004/basicedu.v6i4.3244

Juhardi, J., & Amirullah, A. (2022). Effectiveness of Science Learning Media in Improving Students' Ability to Learn Aquatic Biota Diversity. *Journal of Teacher and Learning Studies*,*5* (1), 51-59. https://doi.org/10.30605/jsgp.5.1.2022.1473

Junianti, C., & Ismail, A. (2024). *The Effect of Outdoor Learning on Elementary Students' Concept Understanding on Plant Parts Material*. *10*(3), 165–172.

Maisarah, Ayudia, I., Prasetya, C., & Mulyani. (2023). Needs Analysis of Digital Media in Science Learning in Elementary Schools. *Journal of Primary School Teaching*,*2* (1), 48-59. https://doi.org/10.56855/jpsd.v2i1.314

Nazilah, A., Sulistyawati, I., Pramulia, P., Education, J., & School, G. (2022). ANIMATION VIDEO EFFECT ON COGNITIVE LEARNING RESULTS INTRODUCTION The learning process is an interaction carried out by students that is useful to achieve a success in this case students will be assisted by educators who play a role. *Https://Doi.Org/10.26740/Eds.V6N2.P161-169*, *VI*(November), 161–169.

Nurdiana, A. S., Hanafi, S., & Nulhakim, L. (2021). Development of Kinemaster-based Animated Learning Video Media to Increase Effectiveness in Science Subjects for Grade Iv Students of Sdn Kedaleman Iv. *Primary: Journal of Elementary School Teacher Education*,*10* (6), 1554. https://doi.org/10.33578/jpfkip.v10i6.8395

Riana Aprianti, R. A., Rakhmat, C., & Indihadi, D. (2023). The Effect of Using Animated Video on Student Learning Interest in the Theme of Animal Movement Organs in Grade V Elementary School. *Journal of Elementaria Edukasia*,*6* (2), 398-407. https://doi.org/10.31949/jee.v6i2.5315

Setyawan, D. A. (2021). Practicum Manual-Testing Normality and Homogeneity of Data with SPSS. In *PENERBIT TAHTA MEDIA (Publishing Group CV TAHTA MEDIA GROUP)* (Issue July). https://www.researchgate.net/publication/350480720

Sihombing, C. (2022). The Effect of Using Learning Video Media on Science Learning Outcomes of Grade V Students. *Edu Cendikia: Scientific Journal of Education*,*2* (02), 289-294. https://doi.org/10.47709/educendikia.v2i02.1644

Simatupang, R. T., Voni Sinaga, C., & Thesalonika, E. (2022). *The Effect of Animated Video Media on Thematic Learning to Increase Learning Interest of Grade IV Students of SD Negeri 122380 Pematangsiantar Pahlawan Tuanku Tambusai University*. *4*, 5146–5152.

Siregar, L., & Sukmawarti. (2022). Development of Sparkol Videoscribe-based Animated Video Media on Social Studies Learning in Elementary School. *Journal of the Center for the Study of People's Education*, *2*(1), 11–21.

Sugiyono. (2022a). *Quantitative, Qualitative, and R&D Research Methods* (2nd ed.). Alfabeta.

Sugiyono. (2022b). *Quantitative, Qualitative, and R&D Research Methods*.

Sujana, A., & Jayadinata, A. K. (2018). *Science Learning in Elementary School*. UP I Sumedang Press. https://books.google.co.id/books?id=HOOEDwAAQBAJ