JPPIPA 10(9) (2024)

Jurnal Penelitian Pendidikan IPA

Journal of Research in Science Education

http://jppipa.unram.ac.id/index.php/jppipa/index

The Effectiveness of Animation Video Media to Increase Interest and Learning Outcomes in Science Subjects

Lavenia Ayu Caella[1*], Sigit Yulianto[1]

[1] Program Studi Pendidikan Guru Sekolah Dasar, FIPP, Universitas Negeri Semarang, Semarang, Indonesia.

Received: June 02, 2024
Revised: July 09, 2024
Accepted: September 25, 2024
Published: September 30, 2024

Corresponding Author:
Lavenia Ayu Caella
laveniaayu94@students.unnes.ac.id

DOI: 10.29303/jppipa.v10i9.8445

Abstract: The science and science learning implemented at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency still uses conventional media, which results in a lack of student interest in learning and has an impact on student learning outcomes. One learning media that can attract students' interest in participating in the learning process is animated video media. The aim of this research is to analyze and describe effective learning media to increase interest and learning outcomes in science subjects. This type of research is quantitative experiment, with A quasi-experimental Design and a Nonequivalent Control Group Design. The population members consisted of class IVA as the control class and class IVB as the experimental class. The data collection techniques used were tests and questionnaire sheets. Data analysis in this research used the Independent Sample T Test to test the differences and effectiveness of Animation Video Media. The research results show that the application of animated video media is more effective than conventional media. The results of the analysis of learning interest and learning outcomes show that the experimental class has a higher average interest score (82.03) compared to the control class (75.88). Meanwhile, the average learning outcome score for the experimental class was higher (81.38) than the control class (66.15). It was concluded that the application of animated video media was more effective than conventional media in the science and sciences subject on Building a Civilized Society.

Keywords: Animation videos; Interest to learn; Learning outcomes

Introduction

Education is a very important factor for humans in achieving their dreams and goals, therefore education must be implemented as well as possible by directing various supporting factors. Education is a deliberate and planned effort to influence other people to help improve student achievement and benefit themselves and those around them. Education also plays an important role in improving the quality of education, especially in producing quality students. Education is very important for humans to increase insight and knowledge in life to improve welfare (Douwes et al., 2023). As explained in the 1945 Constitution, article 31 paragraph 1, namely "Every citizen has the right to education". Based on the Constitution, it can be concluded that every human being has the right to receive a decent education. In the implementation of education there are several problems that must be resolved, the problems that must be resolved include; improving quality, increasing efficiency, equalizing services, and instilling character values.

Curriculum is a very important component in education. Indonesia is now starting to implement the newest curriculum, namely the Merdeka Curriculum. The Merdeka Curriculum is present as an effort to restore education in Indonesia to deal with learning loss and learning gaps due to the Covid-19 pandemic. As the name suggests, the Merdeka curriculum seeks to liberate or give freedom to teachers in using various teaching

How to Cite:
Caella, L. A., & Yulianto, S. (2024). The Effectiveness of Animation Video Media to Increase Interest and Learning Outcomes in Science Subjects. *Jurnal Penelitian Pendidikan IPA*, *10*(9), 6621–6630. https://doi.org/10.29303/jppipa.v10i9.8445

tools to suit the needs and characteristics of students (Ismaya et al., 2021). Daga (2021) stated that the learning process in the Merdeka Curriculum directs students to feel free to think, free to innovate, learn independently and creatively, and free to learn for happiness. Basically, the Independent Curriculum seeks to provide independence for educators and students to create a learning climate that suits their needs in order to improve the quality of learning.

The Merdeka Curriculum focuses on essential content, so that the material taught is more concise, simple and meaningful (Sanjaya et al., 2022). The essential things in the Independent Curriculum led to several elements of change at the elementary school education level, namely the combining of science and social studies subjects into IPAS (Natural and Social Sciences). Faiz et al. (2022) states the aim of having science subjects so that students in elementary schools are better prepared to take part in science and social studies lessons which are held separately at the next level of education. Science learning aims to make students aware that humans as social creatures not only need other humans in life but are also very dependent on nature. All elementary schools in Nusawungu District, Cilacap Regency have implemented the Independent Curriculum. The science and science learning process in schools is carried out quite well, but there are still several shortcomings which have an impact on students' low mastery of knowledge competencies.

Therefore, science learning should be done using learning media (Ningrum et al., 2024). Learning media can help improve students' understanding of the material presented. Learning media are very diverse (Marpanaji et al., 2018). Learning media in the teaching and learning process can arouse students' interest in increasing understanding and obtaining information. According to Kamaliya et al. (2022) and Yanti (2022) Learning media is an intermediary or messenger that contains learning for students carried out by educators. According to Nurhidayati et al. (2023) and Menrisal (2022) Learning media is a learning resource that can help teachers to enrich students' perceptions, with various types of learning media that teachers can use as material to impart knowledge to students. One of the appropriate learning media to be used in elementary school learning is animation-based video media. According to Pujiani et al. (2022) Animated video is the movement of one frame after another that differs from each other within a predetermined time duration, thus creating the impression of movement and there is also sound that supports the movement of the image, for example the sound of conversation or dialogue and other sounds. Animation-based video media is a video media program that is designed, developed and used to achieve learning objectives (Fahlevi & Muchtar, 2024).

The use of animated video media makes abstract science learning concrete (Lailatul & Efendi, 2022). Students are interested in the learning material so that class conditions are calmer and concentration will develop automatically in each student. The material presented by the teacher also looks more concrete and clear because with the help of video media students can see and hear what the main subject of learning at that time is. If these conditions have been created then the material presented by the teacher will be easily absorbed by students. Based on the results of observations and interviews conducted with class IV teachers at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency, the learning process still experiences several obstacles. Some of the obstacles experienced were students' lack of interest in participating in learning which resulted in students' ability to receive or understand learning material, especially science subjects, which was less than optimal. These obstacles occur due to several factors, namely lack of interest in learning, support for students, either from parents or themselves.

Apart from these factors, the lack of student interest in participating in learning is also caused by the use of learning media used by teachers as support in delivering learning material. The learning media used is conventional media, namely pictures, and the use of the lecture method also causes a lack of student interest in carrying out the learning process, which results in more less than optimal student learning outcomes, especially in science and science subjects (Pulungan, 2021). Limitations in developing learning media and learning methods have an impact on students' interest in participating in the learning process, which results in more less than optimal student learning outcomes. Using the lecture method causes students to quickly get bored when delivering learning material which results in reduced student interest in learning, so that sometimes students are not able to optimally understand the material presented by the teacher. In addition, the use of learning methods is less varied, because it only uses lecture and group discussion methods. So, it has a negative impact on student interest and learning outcomes.

Based on this background, researchers were inspired to test the effectiveness of animated video media in seeking better learning to increase student interest and learning outcomes through experimental research entitled "Effectiveness of Animated Video Media for Increasing Interest and Learning Outcomes of Class IV Science and Science Lesson Content at Klumprit State Elementary School 01 Nusawungu, Cilacap Regency".

Method

The method used in this research is a quantitative method. Quantitative research methods are research methods that are based on the philosophy of positivism, used to research certain populations or samples, collecting data using research instruments, quantitative data analysis, with the aim of describing and testing predetermined hypotheses (Ramani & Aguinis, 2023). The research method used in this research is a quantitative experimental research method. According to Zellmer-Bruhn et al. (2016) The experimental research method is a research method used to determine the effect of the independent variable (treatment) on the dependent variable (outcome) under controlled conditions. This research uses experimental research methods because it aims to test the effectiveness of animated video media in increasing interest and learning outcomes in class IV science and science subjects at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency.

According to Arsyam et al. (2021) Experimental research is research that attempts to find the effect of certain variables on other variables under strictly controlled conditions. The research design used in this research is A quasi experimental design (quasi experimental design). Quasi experiments involve the assignment (but not random assignment) of participants to groups. In quasi-experimental research, researchers provide experimental and control treatment to intact groups, administer pre-tests to the two groups, carry out experimental treatment activities with the experimental group only, and then administer post-tests to access differences between the two groups. This research uses a nonequivalent control group design. According to Jalal et al. (2022) The nonequivalent control group design is almost similar to the pretest-posttest control group design, only in this design, neither the experimental group nor the control group are chosen randomly.

Table 1. Design with Nonequivalent Control Group Design

Class	Pre-test	Treatment	Post-test
Experiment	O1	X	O2
Control	O3		O4

Information:

O1 = Pretest and filling out the experimental group's interest in learning questionnaire

O2 = Posttest and filling out the experimental group's interest in learning questionnaire

O3 = Pretest and filling out the control group learning interest questionnaire

O4 = Posttest and filling out the control group's interest in learning questionnaire

X = Treatment or Learning Treatment for Science Subjects using animated video media

Based on this design, it can be described that the implementation of the research used a nonequivalent control group design, starting with holding a pretest in the experimental class and control class (O1 and O3), then the experimental class was given treatment, namely in the form of animated video media (X), while the control class Learning is carried out using learning media that teachers usually apply in learning (conventional). After the learning process in the experimental class and control class, a posttest (O2 and O4) was given. The results of the posttest in the control group were used as a comparison for the impact of the treatment given to the experimental group.

This research was conducted in the period April – May 2024. The location of this research was at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency. In this study, the research population that was the object of research was class IV students at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency. The sample in this study was all 26 students in class IVA as the control class and 26 students in class IVB as the experimental class from SD Negeri Klumprit 01 Nusawungu, Cilacap Regency. The data collection techniques used by researchers are observation, interviews, tests and questionnaires. Observation activities are carried out during the learning process by observing the implementation of learning. The interview activities in this research used an unstructured type of interview conducted with the fourth grade teacher at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency.

Researchers use structured unstructured interviews during pre-research with the core interview questions, namely problems faced by teachers and students in learning, teachers' strategies for dealing with learning problems, learning content that students like and dislike, learning models used, learning facilities such as media, teaching aids and learning resources used, classroom management, and student activity in learning. The test was carried out twice, namely at the beginning before the treatment (pretest) and after the treatment (posttest). In this research, a questionnaire was used to determine the level of learning interest in learning Mapel IPAS. The instruments used in this research were teaching modules, learning interest questionnaires, and test question instruments.

Data analysis techniques at the pre-research stage consisting of validity tests, reliability tests, level of difficulty, and differential power to calculate the results of instrument trials carried out in class IV of SD Negeri Klumprit 01 Nusawungu, Cilacap Regency. Furthermore, the data analysis technique uses prerequisite analysis tests which consist of data

normality and homogeneity tests. After carrying out the prerequisite tests, hypothesis testing is carried out using the t test (independent sample t test) and n-gain test.

Result and Discussion

The aim of this research is to test the effectiveness of animated video media on the interest and learning outcomes of class IV science and science students at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency. After the researcher carried out the research and obtained the data, the data was then processed to answer the hypothesis in this research. Before the research was carried out, the researcher had carried out a trial of the instrument first. Instrument testing aims to test the instruments that will be used in the research. Instrument trials include validity tests, reliability tests, question difficulty level tests, and differential power tests. After carrying out trials, research instruments were obtained that met the specified requirements for use in research. The research instrument in this study consisted of 25 learning interest questionnaire items with four answer options and 25 multiple choice questions with four alternative answers. The instrument is then used to carry out tests in research. After obtaining the instrument that has been tested, the researcher carries out the research and the results of the research are processed and analyzed so that they can be described to make it easier to understand.

The data obtained in this research is data on student interest in learning and student learning outcomes. Interest is a feeling of preference and attachment to a thing or activity, without anyone telling you to. Interest is basically the acceptance of a relationship between oneself and something outside oneself. The stronger or closer the relationship, the greater the interest. Yolviansyah et al. (2021) stated that interest is a desire that encourages an individual to achieve the desired goal optimally based on a feeling of pleasure, interest and trying harder to achieve these results. Interest in learning involves deep attention, interest, and positive emotional experiences towards certain material or topics. Students will have an interest in learning and will be more enthusiastic about learning. Kartika et al. (2019) stated that interest is a stable tendency for students' attention and involvement with learning activities as a whole regarding the importance of meaningful learning that must be achieved. Another opinion from Hasanati et al. (2021) that interest in learning is an interest, a person's full involvement in a particular field of study and feeling like it or enjoying studying that material to gain new knowledge, attitudes and skills. An interest in learning encourages individuals to face challenges, explore topics in depth, and continuously improve their knowledge and skills.

In a lesson, the use of learning media to convey learning material greatly influences students' interest in learning. The use of learning media that can attract students' interest can certainly increase students' interest in learning. In science and science learning in class IV of SD Negeri Klumprit 01 Nusawungu, Cilacap Regency, the material for building a civilized society, the interest used is the use of learning media. The use of learning media that can increase students' interest in learning will have a positive impact on the achievement of the learning process. In this research, the use of learning media is divided into 2, namely the use of animated video media in the experimental class and the use of conventional learning media in the control class. Student activity in participating in the learning process shows students' interest in learning in the learning process. Student activity in each class obtained an average percentage of 82.03% in the experimental class and 75.88% in the control class. This can be seen during the learning process, in the experimental class students can be said to be very active in participating in the learning process.

Student activity can be seen through students' enthusiasm in paying attention to the delivery of material provided by the teacher using animated video media (Yhonara et al., 2022). Apart from students' enthusiasm in paying attention to the delivery of the material, students are also active in asking questions and exploring the material being discussed in the lesson. During the learning process carried out in the experimental class, students seemed more enthusiastic about participating in the learning, even when the learning was about to open, the students looked very enthusiastic about participating in the learning. On the other hand, in the control class, during the learning process students did not appear enthusiastic about participating in the learning. It can be seen that when delivering material using conventional media, students look bored, even less enthusiastic about paying attention to the delivery of the material, apart from that, students are also less active in participating in the learning process.

Based on researchers' observations during the research or learning process, learning using conventional learning media shows a lack of student enthusiasm or in other words, students' interest in learning in classes that use conventional learning media is lacking. Meanwhile, learning using animated video media shows very high student enthusiasm, in other words, students' interest in learning in classes that use animated video learning media is very high. This can be proven through questionnaires or interest questionnaires which show that the value of the questionnaire or learning interest questionnaire in the experimental class has a higher value than the control

class. The students' learning interest whose hypothesis will be tested is the result of filling out the learning interest questionnaire carried out by each student in the control class and experimental class.

Based on the data on the average value of filling out the experimental class and control class learning interest questionnaires, the hypothesis was then tested. Analysis prerequisite tests include normality tests and data homogeneity tests. Based on the analysis prerequisite tests that have been carried out, it is known that the student interest data is normally distributed and homogeneous. Therefore, test the hypothesis of differences using the independent sample t test. Based on the results of hypothesis testing on students' learning interest values, a Sig. (2-tailed) shows a value of 0.027 which means <0.05. Because the Sig value. (2-tailed) < 0.05, then Ho is rejected and Ha is accepted. This shows that there is a difference in the learning interest of class IV students at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency between learning that uses animated video media and learning that uses conventional media.

Learning outcomes are the most important part of learning. (Sulistyo et al., 2020) stated that learning outcomes are the results given to students in the form of assessments after following the learning process by assessing students' knowledge, attitudes and skills with changes in behavior. (Khusna et al., 2023) also states that learning outcomes are the results that students have achieved after participating in learning activities. The results achieved by students can be in the form of abilities, both relating to aspects of knowledge, attitudes and skills possessed by students after receiving learning experiences. According to Audia et al. (2019) Learning outcomes include cognitive, affective and psychomotor abilities. The cognitive domain is knowledge (knowledge, memory), comprehension (understanding, explaining, summarizing, examples), application (applying), analysis (describing, determining relationships), synthesis (organizing, planning), and evaluation (judging).

The affective domain is receiving (receiving attitude), responding (giving a response), valuing (value), organization (organization). The psychomotor domain includes initiatory, pre-routine, and routinized. Psychomotor skills also include productive, technical, physical, social, managerial and intellectual skills. According to Hasanah et al. (2023) says that student learning outcomes are the abilities that children gain after going through learning activities. Because learning itself is a process of someone trying to obtain a relatively permanent form of behavior change. In learning activities or instructional activities, teachers usually set learning objectives. Children who are successful in learning are those who succeed in achieving learning goals or instructional goals (Darling-Hammond et al., 2020). A test is a tool or procedure used to find out or measure something in a situation, using predetermined methods and rules. The test in this study was in the form of multiple choices questions with a total of 25 questions with four answer options.

These questions function to measure students' cognitive learning outcomes in the C2, C3 and C4 domains. The posttest results show that there is a difference in the average learning outcomes between the experimental class and the control class. The experimental class with treatment in the form of using animated video learning media obtained an average score of 81.38. Meanwhile, the control class with treatment in the form of using conventional learning media obtained an average score of 66.15. Judging from the average learning outcome scores, the experimental class that applied animated video learning media had higher scores than the control class that applied conventional learning media. Based on the final test scores of the experimental class and control class that have been obtained, they are then used to carry out hypothesis testing. Previously, a prerequisite hypothesis test was carried out which showed that the learning outcome data was normally distributed and homogeneous. Therefore, test the hypothesis of differences using the independent samples t test. Based on the results of hypothesis testing on student learning outcomes, a significance value of 0.000 was obtained, where the significance value was 0.000 < 0.05.

Be guided by opinion Adri et al. (2020) Regarding the decision making criteria for hypothesis testing, it can be concluded that there are differences in learning outcomes in the science and science subject on Building a Civilized Society in class IV of SD Negeri Klumprit 01 Nusawungu, Cilacap Regency between learning that uses animated video media and learning that uses conventional media.From the learning that has been carried out in the research, data was obtained in the form of different interests and learning outcomes in the experimental class and the control class. The difference in student learning outcomes between the experimental class and the control class occurred due to different treatment between classes, namely the use of animated video learning media and conventional learning media in the learning process. The difference between the experimental class and the control class is also influenced by students' learning interests (Brakhage et al., 2023; Ingkavara et al., 2022). The learning interest of students who apply animated video learning media is very high, so the learning process is more effective.

In the experimental class, students are more active and more enthusiastic about participating in learning. The learning process is dominated by students' exploration of the learning material discussed, the teacher only acts as a trigger using questions, then

students will explore more widely (Keiler, 2018). Apart from that, providing learning material using animated video media also makes students more interested in paying attention to the delivery of the material. It is proven that when the process of delivering learning material uses animated video media, students just sit quietly and pay attention and no one is busy and students don't even look bored with the delivery of the material, students are very enthusiastic about paying attention to the delivery of learning material. A learning process that is dominated by student exploration will make students understand better and their memory of the material discussed will last longer.

Meanwhile, in the implementation of learning in the control class, the learning media used were conventional learning media, which only took the form of pictures and student handbooks. Learning is dominated by teachers who deliver material and then students are asked to explore but students' interest in paying attention and exploring the learning material discussed is very low. It was proven that when the learning material was delivered using the image media in the student and teacher handbook, the students looked bored, and many students were even busy themselves not paying attention to the delivery of the material. When students are asked to explore learning material with the teacher providing triggers in the form of questions, students look confused and lazy to explore the material. In fact, many students seemed unable to understand the material discussed in that day's lesson. Students look confused when asked questions about the learning material. So, in the end it is the teacher who provides explanations regarding learning material that cannot be explored by students. Because the information regarding learning material obtained by students is dominated by the teacher, not from students' independent exploration, students do not understand the learning material and their memory of the material discussed is less memorable and less meaningful for students.

Animated video media can improve student learning outcomes in the learning process (Hapsari et al., 2019). Animated video media increases students' interest and enthusiasm for participating in the learning process, so that students will be more active in participating in the learning process, so that students can explore the learning material widely. Apart from that, student activity can make students active in learning, whether to find the main idea of the material, solve problems or apply what they learn to a problem that exists in real life. In this way, students will usually feel a more pleasant atmosphere so that learning outcomes can be maximized (Cheung et al., 2022). According to Wiguna et al. (2022) Learning is said to be effective if all students can be actively involved, both mentally, physically and socially. The learning process is an activity that stands out to students. Students show high enthusiasm for learning, great enthusiasm for learning, and believe in themselves. Effective learning is learning that involves students in activities in the classroom. In order for learning to take place effectively, all students must be able to be actively involved both mentally, physically and socially.

Effective learning is learning that actively involves students in the learning process. In order for learning to run effectively, the learning carried out must be able to arouse students' enthusiasm for participating in learning, besides that the learning carried out must be able to involve students in its implementation. Learning media is one of the factors that can influence student activity. By using interesting learning media, students will be more enthusiastic about participating in the learning process. Apart from that, learning media can also attract students' attention to pay attention to the learning material being presented.

According to Carolin et al. (2020) states that video media is a learning medium consisting of a combination of audio, writing and moving images which is used to increase students' learning motivation. According to Wahida et al. (2023), learning video media is media or teaching aids that contain learning messages. The use of video media in learning can help students better understand the information conveyed by the teacher without being bound by teaching materials so that learning is easier and does not take up a lot of time. Based on observations made during learning, researchers discovered the fact that learning using animated video media showed students' interest in learning was very high. This is certainly different from the interest in learning shown by students in the control class. Students' interest in learning in the control class who were treated in the form of conventional learning media can be said to be very low. This interest in learning does not provide the effect of students' deep understanding of the material being studied. The results of the research show that the use of animated video media on the learning interest of class IV students in the Social Sciences subject on Building a Civilized Society is higher compared to learning that uses conventional learning media.

The high interest in learning of students in the experimental class shows that learning using animated video media attracts more students' interest and enthusiasm in implementing learning in the classroom. Students have a high interest in paying attention to the delivery of material using animated video media and actively participate in learning material exploration activities, so students can gain knowledge or knowledge well. Many factors influence students to carry out an activity, one of which is the teacher who is an external

factor that influences the student learning process (Metekohy et al., 2022). If teachers in the learning process can facilitate students so that students can have high interest and enthusiasm for participating in learning, such as using animated video learning media as a medium for conveying material to students that can attract students' interest and enthusiasm, then students' learning interest scores will also be high.

Next, to test the effectiveness of animated video media on the learning interest of class IV students in the Social Sciences Subject Building a Civilized Society, researchers used statistical analysis. Based on the results of calculating the level of statistical effectiveness of animated video media, hypothesis testing using a one sample t test (right-hand test) was carried out on the average value of students' learning interest. Before carrying out the right-hand test, an analysis prerequisite test is carried out first. Based on the results of the analysis prerequisite tests, it is known that the data on the learning interest scores of students in both classes shows a normal and homogeneous distribution. Based on the hypothesis test using the N-Gain Test above, it can be seen that the average N-Gain value in the experimental class is 0.50 which is included in the medium category and the average N-Gain value in the control class is 0.28 which is included in the low. It is known that the average N-Gain value for the experimental class is 0.50 > than the average N-Gain value for the control class, 0.28. So it can be concluded that the application of animated video media is more effective than the application of conventional learning media seen from the learning interest of class IV students at SD Negeri Klumprit 01 Nusawungu Cilacap.

The effectiveness of learning can be achieved with the teacher's skills in processing learning components in accordance with learning objectives. The results of observations of student learning outcomes by applying animated video learning media obtained posttest scores with an average score of 81.38. Learning outcomes are the most important part of learning. Zhang et al. (2023) stated that learning outcomes are results that have been achieved by students after receiving instruction within a certain period of time. Learning outcomes can also be interpreted as a reflection of learning efforts. The better the students' learning efforts, ideally the better the learning outcomes they will achieve. Ratnasari et al. (2019) also stated that learning outcomes are learning achievements achieved by students in the process of teaching and learning activities by bringing about change, shaping a person's behavior and learning outcomes as a measurement of the assessment of learning activities. The term learning is the result of scientific assignments which are expressed in the form of behavioral changes relating to what students must achieve while studying at school in cognitive, psychomotor and affective aspects.

Learning outcomes are evidence that someone has learned, which can be seen from changes in that person's behavior from not knowing to knowing and not understanding to understanding. Learning outcomes are changes in behavior that occur in someone who receives learning, from a condition of not knowing and not understanding something, because he learns so that he produces knowledge and understands the things he learns. Based on the opinions expressed by experts, it can be concluded that learning outcomes are abilities, as well as changes in attitudes and behavior obtained by students after going through learning activities. To obtain these abilities, students must experience a learning process, in which aspects of these abilities depending on what the student is studying. The learning process for students is to obtain a relatively permanent form of behavior change. These behavioral changes cover the cognitive, affective and psychomotor areas. Active learning is characterized by students who dominate learning activities. All students are invited to take an active part in every learning process, not only involving mental activity but also physical activity. With active learning, it is hoped that students will be able to experience a more enjoyable learning atmosphere so that learning outcomes can be maximized.

This is proven by the experimental students' learning outcomes being higher compared to the control class. The average value of learning outcomes for experimental class students is 81.38 while for the control class is 66.15. The research instrument used in this research is posttest questions which have been tested for validity, reliability, level of difficulty and differentiability. With cognitive domains C2, C3, and C4 with varying levels of difficulty from easy, medium, and difficult. The learning results obtained by students in the experimental class, out of a total of 25 questions, the question that received the lowest score was question number 23 with the indicator that students were able to classify examples of norm regulations. Question number 19 only got 3 points (11%). The reason for the low score is because this question is included in the HOTS question, where further understanding is needed to analyze the role of the rules. Apart from that, the answer options for this question also have distracting answers that can trick students in answering the question if they don't work carefully.

Meanwhile, for the question with the highest points, namely question number 1, which both have 26 points (96%), in other words only one student answered wrong. The question indicator for this question is that students can differentiate between norms and customs. This question is included in the cognitive domain category C2 (understanding) where in this question

students need to differentiate between the norms and customs that have been studied. Animated video media is used to obtain data on learning outcomes in the experimental class. In testing the effectiveness of animated video media on the learning outcomes of class IV students in the Social Sciences Subject Building a Civilized Society, researchers used a one sample t test (right-hand test) carried out on student learning outcomes data. Before carrying out the right-hand test, the student learning outcomes data for both classes were tested for analytical prerequisites.

Based on the results of the analysis prerequisite tests, it is known that the learning outcomes data for both classes are normally distributed and homogeneous. Therefore, statistical effectiveness tests can be carried out. Based on hypothesis testing using the N-Gain Test results above, it can be seen that the average N-Gain value in the experimental class is 0.71 which is included in the high category and the average N-Gain value in the control class is 0.34 which is included in the high category. currently. It is known that the average N-Gain of the experimental class (0.71) is > than the average N-Gain of the control class (0.34). So, it can be concluded that the application of animated video media is more effective than the application of conventional learning media seen from the learning outcomes of class IV students at SD Negeri Klumprit 01 Nusawungu, Cilacap Regency.

Based on the results of a series of tests, it can be concluded that statistically the learning outcomes of students in the experimental class are higher than those in the control class, which means that the learning process using animated video learning media is declared to be very effective because there is a very significant difference in learning outcomes between the experimental class and the control class. then it can be generalized to a larger population.

Conclusion

This research has been carried out as a quantitative experimental researchs. Based on the results and discussion of research that has been carried out on learning Mapel IPAS Material for Building a Civilized Society using animated video learning media for class IV students at SD Negeri Karangtawang 01 Nusawungu, Cilacap Regency. By using animated video media, students in participating in teaching and learning activities look more active and enthusiastic, this is because animated video media is more interesting than conventional media. Thus, animated video media is very effectively used to increase the interest and learning outcomes of class IV students. This can be seen clearly through the results of the t test and n-gain test.

Acknowledgments
We would like to thank SD Negeri Klumprit 01 Nusawungu, Cilacap Regency for supporting this research.

Author Contributions
L. A. C; is tasked with going into elementary school institutions to carry out observations and research. Apart from that, he is also responsible for carrying out data processing and writing scientific articles; S. Y. is the supervisor and directed the author in the preparation of this scientific article.

Funding
This research received no external funding.

Conflicts of Interest
The author declares that he has no conflict of interest regarding the publication of this scientific article.

References

Adri, H. T., Yudianto, S., Mawardini, A., & Sesrita, A. (2020). Using Animated Video Based On Scientific Approach To Improve Students Higher Order Thinking Skill. *Indonesian Journal of Social Research (IJSR)*, *2*(1), 9–17. https://doi.org/10.30997/ijsr.v2i1.23

Arsyam, M., & Tahir, M. Y. (2021). Ragam Jenis Penelitian dan Perspektif. *Al-Ubudiyah: Jurnal Pendidikan Dan Studi Islam*, *2*(1), 37–47. https://doi.org/10.55623/au.v2i1.17

Audia, A., Sugihartini, N., & Putrama, I. M. (2019). Pengaruh Media Pembelajaran Pengenalan Tata Cara Wudhu Dan Sholat Berbasis Animasi 3 Dimensi Terhadap Hasil Belajar Fiqih Kelas 1 Madrasah Ibtidaiyah Negeri 1 Karangasem. *Kumpulan Artikel Mahasiswa Pendidikan Teknik Informatika (KARMAPATI)*, *8*(2), 197. https://doi.org/10.23887/karmapati.v8i2.18285

Brakhage, H., Gröschner, A., Gläser-Zikuda, M., & Hagenauer, G. (2023). Fostering Students' Situational Interest in Physics: Results from a Classroom-Based Intervention Study. *Research in Science Education*, *53*(5), 993–1008. https://doi.org/10.1007/s11165-023-10120-x

Carolin, L. L., Astra, I. K. B. & Suwiwa, I. G. (2020). Pengembangan Media Video Pembelajaran Dengan Model Addie Pada Materi Teknik Dasar Tendangan Pencak Silat Kelas Vii Smp Negeri 4 Sukasada Tahun Pelajaran 2019/2020. *Jurnal Kejaora (Kesehatan Jasmani Dan Olah Raga)*, *5*(2), 12–18. https://doi.org/10.36526/kejaora.v5i2.934

Cheung, C., Tung, V., & Goopio, J. (2022). Maximizing study abroad learning outcomes through cultural intelligence and emotional intelligence development. *Journal of Hospitality, Leisure, Sport &*

Tourism Education, *30*, 100359. https://doi.org/10.1016/j.jhlste.2021.100359

Daga, A. T. (2021). Makna Merdeka Belajar dan Penguatan Peran Guru di Sekolah Dasar. *Jurnal Educatio FKIP UNMA*, *7*(3), 1075–1090. https://doi.org/10.31949/educatio.v7i3.1279

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, *24*(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791

Douwes, R., Metselaar, J., Pijnenborg, G. H. M., & Boonstra, N. (2023). Well-being of students in higher education: The importance of a student perspective. *Cogent Education*, *10*(1), 2190697. https://doi.org/10.1080/2331186X.2023.2190697

Fahlevi, N. R., & Muchtar, Z. (2024). Development of Learning Media Based on Animation Video In Learning Hydrocarbon Material at Grade XI Senior High School. *Chimica Didactica Acta*, *12*(1), 19–26. https://doi.org/10.24815/jcd.v12i1.36913

Faiz, A., Parhan, M., & Ananda, R. (2022). Paradigma Baru dalam Kurikulum Prototipe. *Edukatif : Jurnal Ilmu Pendidikan*, *4*(1), 1544–1550. https://doi.org/10.31004/edukatif.v4i1.2410

Hapsari, A. S., Hanif, M., Gunarhadi, G., & Roemintoyo, R. (2019). Motion Graphic Animation Videos to Improve the Learning Outcomes of Elementary School Students. *European Journal of Educational Research*, *8*(4), 1245–1255. https://doi.org/10.12973/eu-jer.8.4.1245

Hasanah, I., Rodiah, S., & Afifah, L. (2023). Facilities and Infrastructures' Implications Towards Teachers' Pedagogical Content Knowledge (PCK) Welcoming Merdeka Belajar Curriculum. *Journal of Digital Learning and Distance Education*, *1*(8), 319–328. https://doi.org/10.56778/jdlde.v1i8.73

Hasanati, A., & Purwaningsih, E. (2021). Influence of Interest in Learning and How to Learn on Understanding Concepts: Work and Energy Cases. *Jurnal Pendidikan Sains Indonesia*, *9*(2), 305–316. https://doi.org/10.24815/jpsi.v9i2.19203

Ingkavara, T., Panjaburee, P., Srisawasdi, N., & Sajjapanroj, S. (2022). The use of a personalized learning approach to implementing self-regulated online learning. *Computers and Education: Artificial Intelligence*, *3*, 100086. https://doi.org/10.1016/j.caeai.2022.100086

Ismaya, B., Perdana, I., Arifin, A., Fadjarajani, S., Anantadjaya, S. P., & Muhammadiah, M. (2021). Merdeka Belajar in the Point of View of Learning Technology in the Era of 4.0 and Society 5.0. *AL-ISHLAH: Jurnal Pendidikan*, *13*(3), 1777–1785. https://doi.org/10.35445/alishlah.v13i3.556

Jalal, N. M., Kusuma, P., Istiqamah, H. N., & Ansar, W. (2022). The Effect of Body Image Psycoeducation on Students. *Aksara: Jurnal Ilmu Pendidikan Nonformal*, *8*(2), 1023. https://doi.org/10.37905/aksara.8.2.1023-1030.2022

Kamaliya, D. H., Tukiran, & Indana, S. (2022). Profile of Electronic and Digital Media Learning Implementation During 2018-2022. *IJORER: International Journal of Recent Educational Research*, *3*(3), 354–363. https://doi.org/10.46245/ijorer.v3i3.213

Kartika, S., Husni, H., & Millah, S. (2019). Pengaruh Kualitas Sarana dan Prasarana terhadap Minat Belajar Siswa dalam Pembelajaran Pendidikan Agama Islam. *Jurnal Penelitian Pendidikan Islam*, *7*(1), 113. https://doi.org/10.36667/jppi.v7i1.360

Keiler, L. S. (2018). Teachers' roles and identities in student-centered classrooms. *International Journal of STEM Education*, *5*(1), 34. https://doi.org/10.1186/s40594-018-0131-6

Khusna, N., Widiyono, Y., & Khaq, M. (2023). Improving Activity and Learning Outcomes Through the Student Team Achievement Divisions Learning Model for Elementary School Students. *Pedagogik Journal of Islamic Elementary School*, *6*(1), 39–50. https://doi.org/10.24256/pijies.v6i1.2985

Lailatul, A., & Efendi, N. (2022). The Effect of Using Animation Videos for Teaching Science in Elementary Schools During the COVID-19 Pandemic. *KnE Social Sciences*, 620–628. https://doi.org/10.18502/kss.v7i10.11266

Marpanaji, E., Mahali, M. I., & Putra, R. A. S. (2018). Survey on How to Select and Develop Learning Media Conducted by Teacher Professional Education Participants. *Journal of Physics: Conference Series*, *1140*, 012014. https://doi.org/10.1088/1742-6596/1140/1/012014

Menrisal. (2022). Digital Learning Media: Review. *Journal of Digital Learning and Distance Education*, *1*(4), 131–139. https://doi.org/10.56778/jdlde.v1i4.32

Metekohy, L. M., Daliman, M., Metekohy, B., & Ming, D. (2022). The impact of teaching and learning quality process to school and university education for sustainable future. *JPPI (Jurnal Penelitian Pendidikan Indonesia)*, *8*(1), 143. https://doi.org/10.29210/020221203

Ningrum, R. A., Widodo, W., & Sudibyo, E. (2024). The Influence of Website-Based Learning Media on Science Learning Outcomes in Elementary School Students in the Era of Society 5.0. *IJORER : International Journal of Recent Educational Research*,

5(1), 12–28. https://doi.org/10.46245/ijorer.v5i1.445

Nurhidayati, V. N., Fitra Ramadani, Fika Melisa, & Desi Armi Eka Putri. (2023). Penerapan Media Pembelajaran Terhadap Motivasi Siswa. *Jurnal Binagogik*, *10*(2), 99–106. https://doi.org/10.61290/pgsd.v10i2.428

Pujiani, T., Harsiwi, W., & Almustaflikhah, N. (2022). The Use of Animation Video as Online Learning Media to Teach English for Young Learners. *Acitya: Journal of Teaching and Education*, *4*(1), 244–251. https://doi.org/10.30650/ajte.v4i1.3220

Pulungan, A. H. (2021). The Use of Interactive Learning Media for Teachers in Rural Areas. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*, *4*(1), 524–532. https://doi.org/10.33258/birle.v4i1.1705

Ramani, R. S., & Aguinis, H. (2023). Using field and quasi experiments and text-based analysis to advance international business theory. *Journal of World Business*, *58*(5), 101463. https://doi.org/10.1016/j.jwb.2023.101463

Ratnasari, D., & Haryanto, H. (2019). Analysis of Utilization of Gadgets as Effective Learning Media in Innovation Education to improve Student Learning Achievement. *KnE Social Sciences*. https://doi.org/10.18502/kss.v3i17.4671

Sanjaya, W., Putri, R. S., & Indriyani, N. (2022). Teachers' Readiness and Ability in Designing Teaching Modules in The Independent Curriculum. *Journal Of Digital Learning And Distance Education*, *1*(7), 288–296. https://doi.org/10.56778/jdlde.v1i7.46

Sulistyo, T., Eltris, K. P. N., Mafulah, S., Budianto, S., Saiful, S., & Heriyawati, D. F. (2020). Portfolio assessment: Learning outcomes and students' attitudes. *Studies in English Language and Education*, *7*(1), 141–153. https://doi.org/10.24815/siele.v7i1.15169

Wahida, S., Tobing, M., & Sitompul, A. (2023). Development of media animated video to improve learning outcomes of Sunda siger bridal makeup. *Jurnal Pendidikan Vokasi*, *13*(1), 12–18. https://doi.org/10.21831/jpv.v13i1.52322

Wiguna, S., Julia, A., & Khairuddin. (2022). Upaya Peningkatan Kecerdasan Intelektual Siswa Melalui Model Pembelajaran Jigsaw Pada Mata Pelajaran Al-Quran Hadis Siswa Kelas VII MTS Al Amanah Babalan. *Invention: Journal Research and Education Studies*, *3*(1), 65–76. https://doi.org/10.51178/invention.v3i1.525

Yanti, F. (2022). Innovative Learning Media in Era 4.0: Review. *Journal of Digital Learning and Distance Education*, *1*(4), 125–130. https://doi.org/10.56778/jdlde.v1i4.30

Yhonara, M. A., Astuti, E., & Styaningrum, F. (2022). Effect of Powtoon Media and Problem Based Learning Model on Accounting Student Learning Outcomes. *Jurnal Inovasi Teknologi Pendidikan*, *9*(3), 258–268. https://doi.org/10.21831/jitp.v9i3.53635

Yolviansyah, F., Suryanti, S., Setiya Rini, E. F., Matondang, M. M., & Wahyuni, S. (2021). Hubungan Minat Belajar Siswa Terhadap Hasil Belajar Fisika Di Sma N 3 Muaro Jambi. *Tunjuk Ajar: Jurnal Penelitian Ilmu Pendidikan*, *4*(1), 16. https://doi.org/10.31258/jta.v4i1.16-25

Zellmer-Bruhn, M., Caligiuri, P., & Thomas, D. C. (2016). From the Editors: Experimental designs in international business research. *Journal of International Business Studies*, *47*(4), 399–407. https://doi.org/10.1057/jibs.2016.12

Zhang, L., & Ma, Y. (2023). A study of the impact of project-based learning on student learning effects: A meta-analysis study. *Frontiers in Psychology*, *14*, 1202728. https://doi.org/10.3389/fpsyg.2023.1202728