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The Influence of Using Animated Learning Media on Students Activities in Natural Science Course

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Abstract: The purpose of this study was to determine the effect of using animation learning media on students' activities in science subjects. The method used in this study was to use an experimental design using Posttest Only Control as a measuring tool and collected using a questionnaire technique used to determine the effect of using animation media on student activity in science lessons with a total of 20 students in the experimental class and 20 students in the control class so that the total number of respondents was 40 students. From the results of this research data analysis, it is known that posttest of the use of animation learning media in science lessons, the experimental and control classes have a sign value > 0.05, in the experimental class itself the significance value is 0.200 > 0.05, meaning that the significance value is greater than the significance value minimal. While in the control class itself, the significance value is 0.71 > 0.005, which is greater than the minimum limit. Based on the homogeneity and variance table data for the experimental class and the control class, the calculated significance for student activity in science subjects is 0.768. This means that the significance is greater than the minimum significance of 0.768 > 0.05, so it can be concluded that the variance of scores of the experimental and control groups is homogeneous.

Keywords: Animated Media, Natural Science, Student Activities

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INTRODUCTION

Education is very important for achieving change in a country to realize the main goals, namely the intellectual life of the nation. If a country's priority is to place education, then the country is a very great country, because the welfare of the people is obtained from good education. If education is prioritized, the people will be spared from poverty. To achieve a good educational development, the journey to the stages is very complicated starting from the emergence of several problems that must be faced.

If all parties to the education system participate in the emergence of existing problems, then these problems can be resolved properly among these parties, namely students, parents, teachers, school principals, and the community. At the time of entering this process, parents and teachers are expected to work together in educating children who are smart and have a high leadership spirit starting with the organizational culture in the school. Because when a child is accustomed to the smallest things he does then it will become a good habit in his life, later these habits will make him an extraordinary leader for this country (Flores, 2010).

Currently, the government has made efforts to develop 9 and 12 year compulsory education policies for certain regions. With the implementation of this policy, it is hoped that citizens will be able to carry out this regulation with a minimum education required at the junior high school level or equivalent. In addition, the current government continues to improve education programs for the community so that these policies can develop in order to achieve higher education, these efforts are the holding of scholarships at universities and other institutions such as the holding of bidikmisi. The community and institutions also participate in increasing this educational participation. The program is widely used by educational institutions both in public and private (U.S, 2015).

The increase in the quantity of student members and the duration of obtaining formal education has not been followed by a reflection of the educational outcomes that should be. When people receive a high education, it is expected that the community has high manners. A knowledgeable society should be more concerned with using sensible operations to solve problems faced by the community itself.

However, what is currently going on is not like that, in this country of Indonesia, there are many unresolved issues such as rampant corruption among officials, brawls among students and the community, egoism, bad habits of students, namely cheating during exams. These phenomena themselves are not in line with the expected results of education in this beloved country.

This problem even makes the level of education in Indonesia classified as very low compared to other countries. Competitiveness forms a quality productivity seen from the human resources found by a nation itself. This quality can be seen from the quality of the teachers themselves, school facilities and infrastructure, as well as the students.

In the 2014/2015 academic year the 2013 Curriculum standards have been set throughout Indonesia. This change is an improvement from the 2006 Curriculum. The characteristics of the curriculum can be seen from the design that has been used to improve the curriculum. The implementation of education has the intention of advancing the value of high-quality human resources. These qualities are seen from several points of view, namely science, technology, and art. The implementation of this Kurtilas is expected to change human resources who are creative, innovative, and effective (Setiadi, 2016; Wulandari & Mundilarto, 2016).

In achieving this goal, it focuses on the scientific learning process that believes in the constructivism paradigm (Laksana, 2017). Thus, the learning process is expected to have maximum results in the essence of learning. A significant difference in the Kurtilas and the previous KTSP is that in terms of the learning process, students are more emphasized to be more active in understanding the material they are looking for by themselves. Kurtilas refers more to 4 competencies, namely social, spiritual, knowledge, and skills, with this, students have the potential to be more monitored and developed (Setiadi, 2016).

Success in determining education is determined in terms of the assessment. A good assessment will have an impact on the learning process (Fauziah et al., 2021). The education unit intends to conduct an assessment to meet graduate competency standards in all subjects that educators do for students. The 2013 curriculum conducts assessments carried out by educators and educational units and is reviewed through the syllabus as a reference for evaluation planning making a grid that is determined by the assessment criteria instrument in the ongoing learning process.

Based on the results of observations in schools that will be used as research sites in class IV A and IV B, class IV A consists of 20 students and 20 students for class IV B. The total number of students to be studied is 40 students. In order for researchers to know what problems exist in the class, therefore the researchers conducted interviews with the homeroom teachers involved regarding learning activities in science subjects. When teaching and learning activities take place, on average, all students tend to be passive when teaching and learning activities are carried out, this is due to the lack of use of learning media used by teachers, as a result, making learning less attractive, teachers only use the same media,

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teaching and learning activities in the classroom are also tends to be monotonous, the method used is only lectures, this makes students accustomed to being passive (Puspitarini & Hanif, 2019). Therefore, students do not feel confident to ask questions, express opinions, or re-explain the material presented by the teacher because these students feel that the rebuttal or question is not qualified. So that the value expected by students and teachers is less than the KKM, of course this will make students not develop in learning activities because at school or in class they cannot create enthusiasm in learning. Some are even worse than this, namely, there are students who often skip class without thinking about being afraid of missing out on lessons.

The activeness of students during the learning process is highly recommended because activity is a fundamental element of the importance of success in terms of learning. Therefore, at the beginning of meeting face to face in class the teacher needs to inform the material to be studied, then the teacher provides a stimulus response so that students are more curious about the material to be delivered. So in this case students will be curious about the material to be studied (Vogel & Schwabe, 2018). He will ask himself, answer questions asked by friends or teachers, refute answers from peers, and be able to discuss in groups. Therefore, a learning media is needed in order to make it easier for students to absorb the material to be studied. Thus the selection of the method used must be in accordance with its needs. Therefore, animation media is needed to be able to build the active spirit of students so that the process of learning activities in the classroom looks more lively and not monotonous (Wulandari, 2020). As has been done by previous researchers about animation learning media which greatly influences student activity. Because with the media, students are excited to ask questions, express opinions, and have discussions.

METHOD

The type of research used by the researcher is using a quantitative approach using Quasi Experiment Design, the research design used is posttest. In this study, two classes were used, namely the experimental and control classes. The experimental class will be given a strategy using learning animation media, while for the control class group will be given a strategy using image media. Then the two classes were given the same posttest questions and the two classes were compared to determine whether there was a significant difference in the students' increased activeness in science subjects for the two classes. For class IV A will be given an experimental method and for class IV B will be the control class. Of course, this research will refer to the experimental class compared to the control class.

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The location of the research is SDN 1 Ciambar, Address: Jalan Ciambar KM.5 Pasir Angin, Ciambar Village, Ciambar District, Sukabumi Regency, Indonesia. This research was carried out in class IV in semester 2. This research was carried out on grade IV students at SDN 1 Ciambar starting from January 2020 to April 2020. During that time, the researchers divided the research into several stages, the preparation and guidance of the proposal, the seminar stage proposal, proposal improvement stage, instrument testing stage and instrument improvement, research, data analysis, and research report preparation stage.

The population in this study were some of the fourth-grade students at SDN 1 Ciambar, Ciambar District, Sukabumi Regency, Indonesia, for the 2019/2020 Academic Year, which consisted of 2 classes, namely IV A totaling 20 students and class IV B totaling 20 students. So the population is 40 people.

The first data collection technique is using documents to find relationships between data related to the school and the students to be studied. The second is interviews, in this study researchers interviewed the teacher concerned to determine the condition of students during class learning with the aim of obtaining information from trusted sources. The third is observation, this method is used as a facilitator in research, the use of this method is to observe how the success rate of using instructional media in increasing student activity in science lessons will be carried out by the experimental class. The instrument to be used is a questionnaire on student activity/observation.

The data analysis used in the experimental and control classes is using descriptive analysis techniques that include the mean and variance to determine the number of scores in the two classes. Meanwhile, inferential analysis includes a prerequisite test consisting of a normality test which aims to determine whether the data is normally distributed or not. The normality test was carried out on the posttest scores and the experimental group and the control group. The homogeneity test itself aims to determine whether the data has a homogeneous variance or not, the last one is statistical hypothesis testing using the one sample t-test formula.

FINDING AND DISCUSSION

Finding

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Based on the results of research that has been carried out at SDN 1 Ciambar, the measuring instrument used by researchers is using the Likert scale, this is used to measure the extent to which students are active in carrying out learning activities in science subjects. The questionnaire used was 17 statement items, in which each student was required to fill out the questionnaire after the implementation of the learning activities was over. The highest score obtained by the questionnaire is 4 (strongly agree) and the lowest score is 1 (strongly disagree).

Description of Experiment Class Posttest Data

The implementation of the activities in the final stage is giving the posttest to the experimental class, namely on Wednesday, May 13 at 10.00-10.15 WIB. This posttest was given to 20 students. The following is descriptive data on student activity when participating in the learning process in the experimental class. In Table 1, the posttest results in the experimental class have the highest score of 56 and the lowest score of 49, the average score is 52.65 with a total variance of 3.082. Therefore, the posttest criteria determined from this data were made into the distribution table for the experimental class posttest in **Table 1**.

Table 1. Experiment class posttest results

Internal Value	Frequency	Criteria	Percentage (%)
49 – 50	2	Low	10%
51 – 52	7	Medium	35%
53 – 54	8	High	30%
55 – 56	3	Very High	20%
Total	**20**		**100%**

From the results of **Table 1** it can be concluded that the results of the lowest activeness questionnaire from the data amounted to 2 people with a percentage of 10%, while the medium data amounted to 7 people and a percentage of 35%, for high data, namely 8 people with a percentage of 30% and the highest value. 2 people with a total percentage of 20%.

Control Class Posttest Data Description

The implementation of the activity in the final stage is giving the posttest to the control class, namely on Wednesday, May 13 at 10.00-10.15 WIB. This posttest was given to 10 students. The following is descriptive data on student activity when participating in the learning process in the control class. In Table 2 below are the results of the posttest in the control class, the highest score is 59 and the lowest score is 48, the average score is 49.50 with a total variance of 2.368. Therefore, the posttest criteria determined from this data were made in **Table 2** for the distribution of the control class posttest.

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Table 2. Control class posttest results

Internal Value	Frequency	Criteria	Percentage (%)
47 – 48	7	Low	35%
49 – 50	7	Medium	35%
51 – 52	5	High	25%
53 – 54	1	Very High	5%
Total	**20**		**100%**

Based on the results of **Table 2**, it can be explained that the interval value of 53-54 has very high criteria with the number of students as much as 1 student with a percentage of 5%, while the interval value of 51-52 with a high criterion of 5 students with a percentage of 25%, for the interval 49-50 moderate criteria the number of students as many as 7 students with a percentage of 35%, and the interval 47-48 with low criteria as many as 7 students with a percentage of 35%. Based on the comparison of the posttest results of the experimental and control classes, the value obtained by the experimental class is 52.65 while for the control class the average value is 49.50. The comparison can be illustrated by **Table 3**.

Table 3. Comparison of experimental and control class posttest scores

No	Class	Average
1	Experiment	52.65
2	Control	49.50

Based on the posttest results of using animated learning media in science lessons, if seen in the table above, the experimental and control classes have a sign value > 0.05, in the experimental class the significance value is 0.200 > 0.05, meaning that the significance value is greater than the minimal significance. While in the control class itself, the significance value is 0.71 > 0.005, which is greater than the minimum limit. This test is carried out using the SPSS statistical version 21 application with the Levene test formula. In order to know whether the data is homogeneous or not, a test with a significance of 5% (0.05) on the statistical level is used. ie if sig < 0.05 then the variance is not homogeneous.

Table 4. Homogeneity and variance

Levene Statistic	df1	df2	Sig.
0.087	1		0.768

Based on **Table 4**, therefore the data on student activity in science lessons using animation media in the experimental class and control class obtained the arithmetic significance for student activity in science subjects is 0.768. This means that the significance is greater than the minimal significance of 0.768 > 0.05, so it can be concluded that the variance of the scores of the experimental and control groups is homogeneous.

This hypothesis test is carried out after the analysis prerequisite test has been fulfilled. In this study the hypothesis test has been fulfilled and even this result has a homogeneous level of variance, therefore the researcher can make a hypothesis using the One Sample T-Test formula to test the difference in the average posttest score of student activity in the learning process in science lessons in the experimental class. and control class. The following is the hypothesis testing proposed.

Ho : There is no effect of using image media on student activity in science subjects for class IV SDN 1 Ciambar.

Ha : There is an influence in the use of animation media on student activity in science subjects in class IV SDN 1 Ciambar.

This data analyst uses an independent one sample t-test using the statistical program version 21. Therefore, there is a significant difference, therefore the criteria for testing this hypothesis are if the t-test is significant > 0.05 then Ho is accepted and Ha is rejected, if the significance t-test is > 0.05, then Ho is accepted and Ha is rejected. T-test < 0.05 then Ho is rejected and Ha is accepted.

Discussion

This research was conducted at SDN 1 Ciambar, Ciambar District, Sukabumi Regency. The research population used was some of the fourth grade students of SDN 1 Ciambar. Conditions at the beginning of the learning process researchers did not use the pretest as a material to determine their knowledge. Because the researcher wants to know how active students are in participating in science learning at the beginning of learning by providing a response stimulus either at the beginning, middle or end of learning in the experimental and control classes (Kim et al., 2021). Because previously students' learning outcomes in science classes tended to be passive and monotonous which resulted in students feeling insecure to ask questions, express opinions, and discuss with their classmates. Therefore, in order for researchers to know the extent to which the development of student activity in science lessons, researchers gave different treatments to the two classes and as an evaluation material using a posttest in the form of an activity questionnaire given to the experimental and control classes.

The sample used in the experimental class is 10 students, the method given to the class uses animation media. In learning in this class, students are more emphasized in learning to use animated cartoon videos so that learning seems more fun, interesting, clear, and interactive (Hanif, 2020). The material delivered through the animated media will arouse students' curiosity and can stimulate students' thinking to interact both physically and

emotionally (Rahmatina et al., 2019; Saripudin et al., 2018). With the use of this media, it can also help teachers make the teaching and learning process more lively, not monotonous and students do not feel bored because the delivery of material is more different than before, besides that it can also change the teacher's role to be more productive, utilize the media properly because at the time In this activity, the teacher's role is no longer the only source of learning for students (Hyönä, 2010).

While in the control class the researcher also used a sample of 10 students, the method given in this class was using image learning media as teaching materials to obtain information apart from students' thematic books. The use of this method is clearly very different from the use of animated media as teaching materials, for the use of this method the teacher explains more about what is happening in the picture as a result learning is not interactive because students only receive material information from the teacher.

The use of animation media in the experimental class when viewed from the posttest results is 52.65. The results of the research that has been carried out by researchers are proving that there are differences in the effect of using animation learning media on student activity in class IV. It is proven that the results obtained from the independent N-gain analysis One-sample t-test are 2-tailed significance value 0.000 < 0.05 so that the final result in the hypothesis Ho is rejected and Ha is accepted. Based on these results, it can be concluded that the learning process using animation media and using image media has different results after giving different treatments to the two classes.

From the results of this study, we can see that the use of animated learning media is very useful, especially to strengthen students' understanding of the material presented, besides that animated videos can also add new things to the learning process (Wuryanti & Kartowagiran, 2016). In animated videos students can get moving images along with sound so that it makes the teaching and learning process very unique. With the use of very varied media, it can overcome the things that make students reluctant and passive when learning, therefore the use of these media on students is very appropriate because it has many uniqueness.

As we know that the current pandemic period requires all students to study at home (follow the online learning process). Therefore the use of animated learning media is very appropriate to use especially with conditions that are very difficult to learn face to face (Utami et al., 2021). To get even this media is very easy to find, we can use animated videos from YouTube as desired or according to the material to be studied (Koto, 2020). Besides that we as educators can make animated learning videos with our own designs using applications that

have been provided such as using Powtoon media or Animaker (Awalia et al., 2019). Here, educators can immediately create characters, record sounds, insert music and insert images.

The use of this animated learning media can be used individually or in groups with the direction of the teacher as an explanation and facilitator, in this case the teacher must have the ability to understand how students learn so that the learning process or understanding of the material is in accordance with what is expected for the achievement of learning success (Seftiani et al., 2020). When learning activities take place the teacher must make observations to students by guiding.

CONCLUSION

Based on the conclusions obtained by researchers regarding the use of animation media in class IV SDN 1 Ciambar very influential on student activity in this experimental class because the media used is very attractive to students, namely: (1) The use of animation media is very effective to be used as a learning medium because language which is used more easily understood by students; (2) The implementation of the learning process is more interactive because this animated media can make it easier for students and teachers to communicate actively in two directions while learning is in progress; (3) Make it easier for students to capture learning material more fully and deeply; (4) Learning animation media can be used anytime and anywhere; (5) The material obtained from the animation media can change from abstract to more concrete.

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