The Use of Waste Utilization Learning Videos on Learning Outcomes of Elementary School Students

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ABSTRACT

This study aims to analyze the teaching of waste utilization starting from the definition, type, processing process as well as the use of waste using digital learning methods for elementary school students. The study was conducted on 30 elementary school students in Bekasi City, Indonesia. Learning using video media through google meet. This data collection analysis used pre-test and post-test questions as many as 20 questions. Final score pretest and posttest the application of the media were compare with the test (Paired Sample t-Test) via SPSS 25 for windows. The result of this research is that there is an increase in learning outcomes regarding the use of waste after students watch the video and it is also explained through google meet. It can be seen that there is an increase from 37,586 to 85,571 in the post-test from the pre-test average results. the value of sig (2-tailed) 0,000 < 0,05. This indicates that there is a significant influence on the use of learning video media on waste utilization on the learning outcomes of elementary school students.

1. Introduction

Learning is a process of interaction between students and educators, learning resources and the learning environment. Learning is assistance provided by educators so that the process of acquiring knowledge and knowledge, mastering skills and character, and forming attitudes and beliefs in students can occur. Learning is done using video media to attract students' interest. Learning video is a medium that presents audio visuals containing learning materials that contain concepts, principles, procedures, theories and examples of knowledge in the hope that students can understand the contents of the learning materials (Kristanto, 2011). The use of video used in the learning process aims to improve student learning outcomes. Learning outcomes are changes in behavior in a person which may be caused by changes in the level of knowledge, skills, or attitudes (Acesta, 2014).

One of the subjects in the field of teaching is the utilization of waste. Waste is an object that is disposed of, either from nature or from a technological process, in the form of piles of used goods, the rest of animal, plant or vegetable waste. Some of the waste can be reused without undergoing a recycling process. This means that the waste can be used directly. One of the processes of utilizing waste is by recycling waste. Recycling is the reuse of unused items into other useful products (Manora, 2019).

Based on the research that has been done by Bahar *et al.,* (2018), it can be concluded that there is an effect of practicum video through the inquiry learning model on the understanding of concepts and learning outcomes, this can be shown by the data on the average percentage of students' concept understanding indicators in the experimental class in the experimental class. high category, while for the control class the average percentage of students' concept understanding indicators is in the medium category. Based on the research conducted by Andreas & Gusmareta (2018), it can be concluded that video tutorials on soil mechanics and foundation engineering courses are valid, practical, and effective to be used as learning media. Another relevant research conducted by Kusuma *et al.,* (2015) that the results of shows the use of tutorial learning videos can improve students' understanding.

The novelty of this research is (i) the use of waste is one of the materials that is simple and easy to understand by elementary school students; (ii) the use of learning videos on waste utilization materials; and (iii) the use of video media can improve student learning outcomes. Based on previous research, not many have discussed the application of video learning in waste utilization lessons for elementary school students. Therefore, researchers aims to analyze the teaching of waste utilization using the video learning method to elementary school students. This research was conducted on 30 students at SDN Sepanjang Jaya 1.

2. Methods

The research method uses quantitative methods One Group Pretest-Posttest Design by Sugiyono (2013) with data collection techniques generated from online questionnaires via google form in the form of pre-test and post-test questions to 30 grade 5 elementary school students at SDN Sepanjang Jaya 1 Bekasi City, Indonesia with the answer choices "Yes" and "No ". Teaching is done by providing videos and explanations through google meet. The time of the research was carried out on January 15, 2022 - January 20, 2022. Final score pretest and posttest the application of the media were compare with the test (Paired Sample t-Test) via SPSS 25 for windows.

3. Results and dicussion

Table 1. describes the results of the pre-test and post-test of the 30 students who were sampled in this study. Based on the data table shows that the level of understanding of students using video media increased.

Table 1. Results of Pre-Test and Post-Test.

No	Pre Test and Post Test Questions	Pre-Test (%)	Post-Test (%)
1	In your opinion, is it important to study waste utilization materials?	73,3	100
2	Do you know the definition of waste?	46,7	93,3
3	Do you know the types of waste?	0	86,7
4	Have you ever recycled waste into something more useful?	46,7	100
5	Do you know about the 5R principles?	56,7	93,3
6	Do you know how to properly process non-organic waste?	43,3	100
7	Do you know how to properly process organic waste?	0	83,3
8	Is it true that when we throw garbage into the river, the river will be polluted?	46,7	83,3
9	Is it true that throwing garbage into sewers can pollute the environment?	26,7	76,7
10	Is it true that the recycled waste is generally a type of inorganic waste?	0	83,3
11	Is it true that when plastic waste is dumped on the ground, it will be easily decomposed by the soil?	76,7	93,3
12	Do you know how to dispose of garbage properly and correctly?	36,7	76,7
13	Is it true that battery waste is a type of B3 waste?	66,7	76,7
14	Do you know the stages of waste management?	76,7	96,7
15	Is it true that household waste is included in organic waste?	50	90
16	Do you know about the waste bank?	40	96,7
17	Do you know about compost?	23,3	76,7
18	Do you know about composting?	56,7	96,7
19	Is it true that throwing garbage into sewers can pollute the environment?	56,7	86,7
20	Are you interested in making handicrafts from plastic waste?	63,3	100

The results of the study from Table 1 are as follows:

Questions number 1,2,3,4, and 13 the results have increased. This is because the material regarding the definition, types, principles, processing as well as the use of waste is explained in the

learning video as well as google meet. For questions number 5, 6 and 7 the results have increased. This is because students have received material on the 5R principles as well as the types of waste in 3rd grade. For questions number 8, 9,14,17,18,19 and 20 the results have increased. This is because the material regarding waste pollution is explained in the learning video as well as during the google meet. The use of learning videos (audio visuals) can increase students' learning motivation because students are interested in various animations (Lina *et al*., 2019).

As for the number 10 and 11 the results have increased. This is because the recycled materials were delivered in 4th grade. For question number 12 the results have increased. This is because students have gotten used to throwing garbage in its place. For question number 15 the results have increased. This is because students initially did not know about household waste, after being explained students became aware of household waste and for question number 16 the results have increased. This is because around the school there is a garbage bank.

Table 2. Average Pre-Test and Post-Test Scores

Data	Pre-Test	Post-Test
The number of students	30	30
Average	37,586	85,517

Based on the Table 2, it can be seen that there is an increase in the post test value from the pre test. this shows the effect of using video media on student learning outcomes. This is also in accordance with research conducted by Bahar (2018) that use of learning videos can improve students' understanding.

The steps taken at the evaluation stage are processing data pretest and posttest using SPSS 25 for windows for Paired test Sample t-Test. The steps taken are Analyze-Compare means-Paired Sample t-test. The result are present in Table 3.

Table 3. Result T-Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	Df	Sig (2-tailed)
					Lower	Upper			
Pair 1	Pretest - Posttest	-48,000	9,702	1,771	-51,623	-44,377	-27,097	29	,000

Table 3. explains that the result of the calculation of the value of sig (2-tailed) 0,000 < 0,05. This indicates that there is a significant influence on the use of learning video media on waste utilization on the learning outcomes of elementary school students.

The result of hypothesis testing are supported by the results of previous research conducted by Andreas and Gusmareta (2018) with research result showing that there are differences in the results which is significant between student learning outcomes using videos. Another relevant research conducted by Kusuma *et al.,* (2015) that the results of shows the use of tutorial learning videos can improve students' understanding.

This signifies interactive learning media can foster interest in learning due to innovation, display interesting, so that it makes students more enthusiastic in learning which ultimately results in achievement student learning also increases. In accordante with the results of the data that has been analyzed and also refers to theory as well as reserch previously, it was stated that the use of waste utilization learning media could improve the learning outcomes of elementary school students.

4. Conclusions

Learning to utilize waste using video and google meet methods to 30 elementary school students showed a fairly good increase in learning outcomes. Students' understanding in the learning process through pre-test and post-test evaluations increased significantly from 37,586 to 85,517. The value of sig (2-tailed) $0,000 < 0,05$. This indicates that there is a significant influence on the use of learning video media on waste utilization on the learning outcomes of elementary school students. This is in line with research conducted by Bahar (2018) that the use of learning videos can improve students' understanding.

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6. Authors Note

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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