



G-SITE DEVELOPMENT AS TEACHING MATERIALS AND SCIENCE LEARNING MEDIA TO IMPROVE JUNIOR HIGH SCHOOL STUDENT LEARNING OUTCOMES ON PLANT STRUCTURE MATERIALS

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Abstract: Natural science learning during the Covid-19 pandemic has quite a high challenge because students and teachers cannot learn directly. Knowing the effectiveness of using Google-site as a material and media for student learning during distance learning to improve student learning outcomes is the aim of this study. This research was conducted at SMP PGRI 1 Karang Tengah Tangerang in grade 8. Purposive sampling was carried out for sampling in this study, so that class 8-E was the experimental class and class 8-E was the control class. The results showed that the use of Google-site as teaching materials and learning media was feasible. The use of Google-site as teaching materials and learning media has no significant effect seen from the Mann Whitney test of 0.419. The average N-gain test obtained from the control class was 0.029, while the experimental class was 0.051. The comparison of the mean value of the control class pretest and posttest was 1.4 points, while the average score of the ecaperimen class was 3 points. Based on this, it can be concluded that the use of Google-site as a material and media for student learning during distance learning can be used to improve student learning outcomes. However, several revisions are needed so that teaching materials and media are more effective in improving student learning outcomes independently.

Introduction

One of the important things for human life is education. In times of the rampant covid-19 pandemic, education has very high challenges, especially for teachers who are at the forefront of education. According to the 2020 Kemdikbud Pusdatin online article, with the outbreak of the Covid-19 virus, physical restrictions have been imposed in various public environments including the educational environment. Physical restrictions imposed in schools make face-to-face learning difficult due to the various limitations that students and teachers have. There are many ways that can be circumvented to improve student learning outcomes during a pandemic, such as through a web-based module so as not to consume a lot of internet quota compared to video coverage.

The results of the analysis carried out found that the science teacher at SMP PGRI 1 Karang Tengah, Tangerang city, had problems with the decreasing science learning

outcomes of students, one of which was in the material of plant structure and function because it had many foreign terms in it. Moreover, during the pandemic, students had difficulty learning because they could not do face-to-face learning. Studying the structure of plants will be useful for students in knowing the relationships and functions, as well as the use between parts, especially in daily life. The use of instructional media is very important in delivering material from teachers to students. According to Amirullah & Susilo (2018) learning media is an important component of learning resources.

Basically, every student has a device at his house, and SMP PGRI 1 Karang Tengah uses google classroom as an online learning platform during the physical restriction period. The Google-site which is used as teaching material and learning media is expected to be able to improve the science learning outcomes of SMP PGRI 1 Karang Tengah students on the structure and function of plants.

Method

This study aims for this research is an experimental study with the ADDIE model, with a sequence of Analysis (analysis), Design (design), Develop (develop), Implementation (implementation), and Evaluating (evaluate). In this study, the first stage carried out was an analysis consisting of needs analysis based on subject teacher interviews, and validation of questions using anatest. The second stage is designing, consisting of the preparation of tools and materials on the learning media. The next stage is the development stage, which is the stage where the media is made. The fourth stage is implementation, at this stage the students in the experimental and control classes were given pretest questions, then the learning media was tested on the experimental class. The fourth stage is the evaluation stage, this stage is evaluated in the form of giving posttest questions to the control and experimental classes.

Sources of data in this study are science subject teachers and 50 students of SMP PGRI 1 Karang Tengah. The population of this research is all students at SMP PGRI 1 Karang Tengah with the sample in the experimental class in class 8-E and the control class in class 8-B.

The instrument used in this study was a questionnaire for the feasibility test given to 2 media experts, and pretest and posttest questions to 50 control class students (25 students) and the experimental class (25 students). In this study, the data collection technique used was to give questions to the control and experimental class students. Meanwhile, to test the media validity is by giving a questionnaire to media experts. The percentage of data that has been collected from media experts is calculated using the formula:

$$P = \frac{f}{N} 100\%$$

Information:

f = the frequency for which the percentage is being sought.

N = number of cases

P = percentage

The results of the media feasibility assessment are then compared with the following criteria:

Table 1. Media Eligibility Criteria

Range (%)	Criteria
≤55-59	Not Good
60-75	Good enough
76-85	Good
86-100	Very good

The data that has been obtained is then processed using the SPSS application.

Result

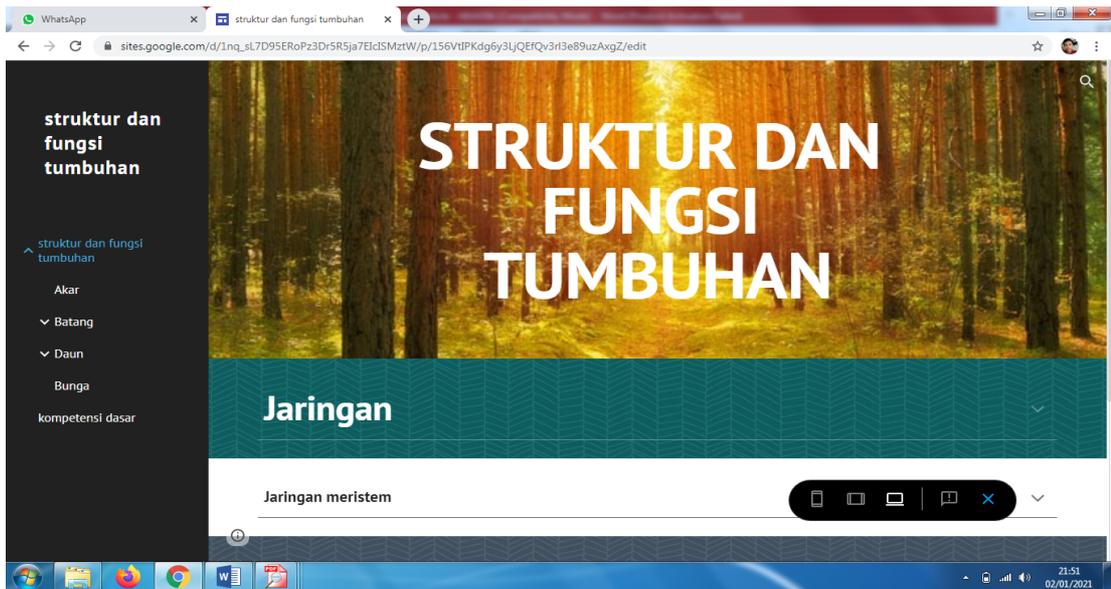
In this study, the first stage carried out was an analysis consisting of needs analysis based on subject teacher interviews, and question validation using anatest. There are also indicators of learning outcomes for plant structure obtained from the analysis process as follows:

1. Describe the structure of the root constituent network
2. Describe the structure of the trunk composing network
3. Identify the network structure of the leaves

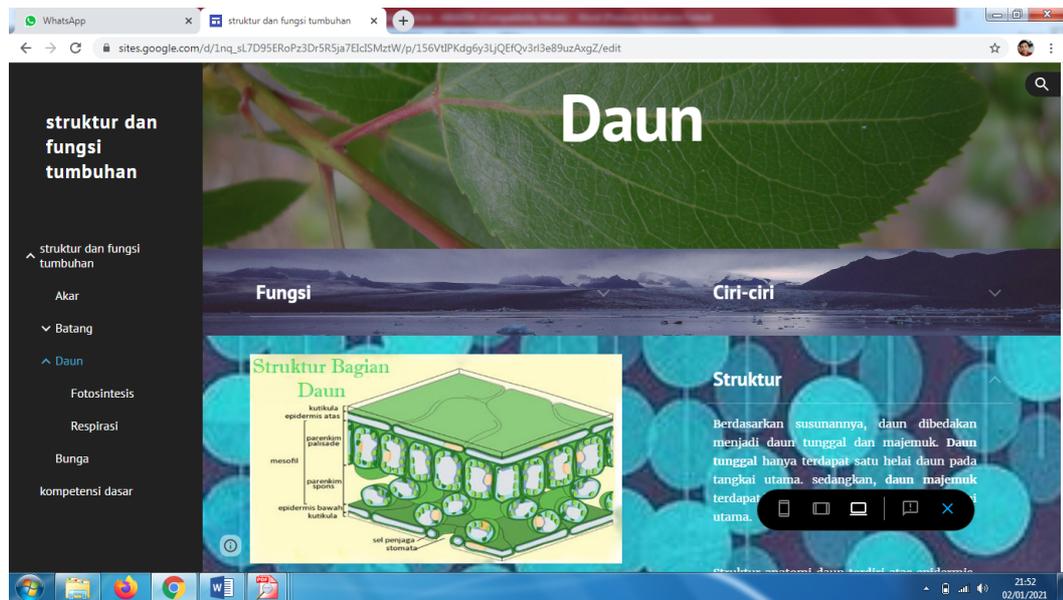
The second stage is designing, consisting of the preparation of tools and materials on the learning media. The tools obtained from the design stage are KD, learning objectives, and the material and sub-material. The next stage is the development stage, which is the stage where the media is made. So that it is obtained as follows:



Figure 1. Looks Google-site on Mobile



(a)



(b)

Figure 2. (a), (b) Display of Google-site on PC / laptop

The learning media in this study is web-based, developed from google-site, so internet access is needed to use it. This learning media has been assessed for its feasibility by media experts with the results in table 2.

Table 2. Media feasibility assessment

Aspect	Persentase	Criteria
Content eligibility	72 %	Good enough
Serving eligibility	68 %	Good enough

From table 2 it can be seen that the feasibility of the content / material on the media is 72%, so it is included in the fairly good category. Meanwhile, the presentation feasibility got a percentage of 68%, so it was included in the fairly good category. Overall, the media assessment has a value of 70%, and is in the quite good category.

The fourth stage is implementation, at this stage the students in the experimental and control classes were given pretest questions, then the learning media was tested on the experimental class. The fourth stage is the evaluation stage, this stage is evaluated in the form of giving posttest questions to the control and experimental classes. So that the results below are obtained:

Table 3. descriptive data

Data	Control class		Experiment class	
	Pretest	Posttest	Pretest	Posttest
Sample	25	25	25	25
Minimum score	20	20	15	20
Maximum score	90	90	90	90
Average	50,6	52	54,8	57,8

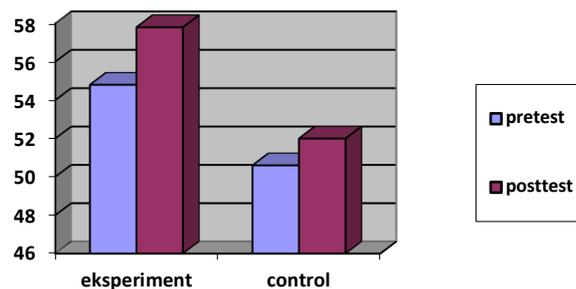


Diagram 1. Average data

K-S test (Kolmogorov-Smirnov) and saphirowilk were performed to determine normality. If the significance > 0.05 for both of them, the data is declared normal. The results of normality data in this study can be seen in Table 4.

Table 4. Normality test results

	Kolmogorov-Smirnov significance	Shapiro-Wilk Significance	Criteria
Control Pretest	0,200	0,196	Normal
Control Posttest	0,200	0,304	Normal
Experiment Pretest	0,059	0,028	Not Normal
Experiment Posttest	0,089	0,042	Not Normal

The data in table 4 shows that the significance data of the pretest and posttest experiments <0.05, so the data is categorized as abnormal. Meanwhile, the significance data of the pretest and posttest control <0.05, so that the data was categorized as normal.

Table 5. Homogeneity test results

Data	Significance	criteria
Eksperimen – control	0,182	homogen

The data in table 5 shows that the significance value is $0.182 > 0.05$, so the data is declared homogeneous. This shows that the experimental-control class has a homogeneous population. If the data are homogeneous and normally distributed, then the data can be tested by paired sample t-test. While the data above are not all normal and homogeneous, so the next data will be tested by the Mann Whitney test.

Table 6. The results of the Mann Whitney T test

Data	Sig. (2-tailed)
Eksperimen-kontrol	0,419

The data in table 6 shows that the sig. (2-tailed) on the Mann Whitney test is $0.419 > 0.05$, so that H_a is rejected and H_o is accepted. So it can be stated that the use of google-site does not have a significant effect on student learning outcomes.

Table 7. The results of the N-gain average test

Kelas	Average	Category
Experiment	0,051	Low
Control	0,029	Low

The average N-gain value in table 7 shows that the experimental class is 0.051 which is in the low category. Likewise, the average N-gain value in the control class is 0.029 which is included in the low category. Even though the experimental and control classes are in the low category, the average N-gain value in the experimental class is still higher when compared to the control class, so it can be said that the class using google-site media is more effective than not using it.

Discussion

The use of google-site as a learning material and media for the structure and function of plants is proven to be influential in SMP PGRI Karang Tengah. However, the use of google-site as a learning material and media has had less effective results.

The ineffective use of google-site as a learning material and media is due to various reasons, namely the feasibility of the media which is only up to a good level. Media experts consider that the media used does not attract students' attention because of the few pictures that are listed in the media. According to research conducted by Panjaitan (2017) the use of images in learning media can improve students' science learning outcomes.

Apart from the feasibility of the media, students' interest in learning is considered less influential and as an obstacle in this study. This was obtained from the statement of the science teacher at SMP PGRI 1 Karang Tengah himself who stated that his students had less interest in learning and most of them were in a less supportive environment for learning, especially during the pandemic. According to Ricardo (2017) students' interest in learning is very important, so that if students have high learning interest, it will make it easier for teachers to guide them to get high learning outcomes.

However, when viewed from the comparison of the average N-gain value, the effectiveness of classes using google-site as learning material and media is higher than classes that do not use google-site as learning material and media. Likewise, it can be seen from the comparison of the mean value of the experimental class that it has an increase of 3 points, while the control class only gets an increase of 1.4 points.

Conclusion

The conclusion of this study is that the use of google-site as a learning material and media in science subjects can improve students' cognitive learning outcomes by 1.6 points compared to those who do not. And the use of google-site as a learning material and media in science subjects is considered effective, with an average difference in N-gain of 0.022 compared to those who do not use it.

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