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THE EFFECT OF USING *GOOGLE SITES* MEDIA ON THE LEARNING OUTCOMES OF SCIENCE AND TECHNOLOGY STUDENTS IN GRADE V

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Abstract

Learning media is very influential in teaching and learning activities to achieve learning objectives. Besides teaching, the teacher acts as a facilitator who is expected to be able to present innovative learning media for students. The teacher's creativity in choosing learning media can attract students' learning interests so that it has an impact on improving learning outcomes. This study aims to determine and analyze the use of instructional media Google Sites on the learning outcomes of grade 5 students in the subject of Natural Sciences (IPA) at SDN Beji Timur. The research method used is like an experimentwithNon-equivalent Control Group Design. The population in this study were all 5th-grade students at SDN Beji Timur for the 2022/2023 academic year.

In contrast, the research sample was 68 students consisting of 34 students in class 5B and 34 in class 5E. The type of instrument used in this study was a multiple choice test that was tested whenPre-test andPost-test. Data analysis techniques were carried out to test normality by testingKolmogorov-Smirnov, homogeneity test with Levene Statistic. Next, test the hypothesis using the test independent sample t-test. Based on the t-test, hypothesis testing shows no effect on the average grade 5 science learning outcomes using mediaGoogle Sites at SDN Beji Timur. Thus, using mediaGoogle Sites does not affect student learning outcomes in Natural Sciences (IPA) subjects at SDN Beji Timur.

Keywords: *Google Sites; Learning Media; Learning Outcomes*

Abstrak

Demi tercapainya tujuan pembelajaran, media pembelajaran sangat berpengaruh dalam kegiatan belajar mengajar. Disamping mengajar, guru berperan sebagai fasilitator yang diharapkan mampu menghadirkan media pembelajaran yang inovatif bagi siswa. Kreativitas guru dalam memilih media pembelajaran dapat menarik minat belajar siswa sehingga berdampak pada peningkatan hasil belajarnya. Penelitian ini bertujuan untuk mengetahui dan menganalisis penggunaan media pembelajaran *Google Sites* terhadap hasil belajar siswa kelas 5 pada mata pelajaran Ilmu Pengetahuan Alam (IPA) di SDN Beji Timur. Metode penelitian yang digunakan adalah *Quasi Experiment* dengan *Non-equivalent Control Group Design*. Populasi dalam penelitian ini adalah seluruh siswa kelas 5 SDN Beji Timur tahun ajaran 2022/2023. Sedangkan yang dijadikan sampel penelitian adalah 68 siswa yang terdiri dari 34 siswa kelas 5B dan 34 siswa kelas 5E. Jenis instrumen yang digunakan pada penelitian ini adalah tes pilihan ganda yang diujikan saat *Pre-test* dan *Post-test*. Teknik analisis data dilakukan untuk menguji normalitas dengan uji *Kolmogorov-Smirnov*, uji homogenitas dengan *Levene Statistic*. Selanjutnya, untuk menguji hipotesis menggunakan uji *independent sample t-test.* Berdasarkan pengujian hipotesis uji-t menunjukkan bahwa tidak ada pengaruh dari rata-rata hasil belajar IPA kelas 5 dengan penggunaan media *Google Sites* di SDN Beji Timur. Dengan demikian dapat disimpulkan bahwa penggunaan media *Google Sites* tidak berpengaruh terhadap hasil belajar siswa pada mata pelajaran Ilmu Pengetahuan Alam (IPA) di SDN Beji Timur.

Kata Kunci: *Google Sites*; Hasil Belajar; Media Pembelajaran.

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Introduction

The process of learning activities is one of the things that need attention in education. Fitriya et al. (2021) state that learning is the core of the educational process. This means that if the learning process is good, it can also provide good quality education. Learning is a process to help students learn well, so learning itself is closely related to the words learning and teaching. According to Suzana & Jayanto (2021), learning is the activity of an individual who tries to change himself towards a better direction through the experiences he has gained from the learning process. In line with this opinion, Hapudin (2021) revealed that changes in individuals through the learning process would be permanent due to the experiment. Furthermore, Rahmat (2019) explains that teaching is an activity carried out by the teacher to convey knowledge to students during the learning process. It can be understood that the interactions between teachers, students, and learning resources are components that can form a holistic and comprehensive learning pattern.

Teachers instruct to ensure that the teaching and learning process runs smoothly morally and that students feel comfortable. According to Suardi (2018), when learners or students learn, the teacher plays an essential role in their conscious involvement in maximizing their expertise to achieve curriculum goals. Furthermore, Luh, N., & Ekayani (2021) interpreted that when someone learns, it means that the person has undergone a process of change within himself. The change is shown in the form of an increase in the quality and quantity of behavior, such as increased skills, knowledge, attitudes, habits, understanding, skills, thinking power, and other abilities. So, it can be concluded that an individual will try to explore his potential from the learning process.

Science is learning that is closely related to life that occurs in nature Ramadhani (2019) said that science learning is a science that studies phenomena that occur in nature based on observation, experimentation, reasoning, and theory building to obtain knowledge, ideas, and concepts about the natural environment. This means that science concepts always connect facts that occur in nature, both in the past and future. For the elementary school level, Kumala (2016) suggests that through integrated science learning, students are expected to be able to develop their knowledge, scientific attitudes, and process skills. Furthermore, Astuti (2017) explains that science aims to ensure students have good character, apply scientific attitudes, and utilize the possibilities that exist in nature as a source of knowledge that can be used in everyday life. It can be understood that science learning has a systematic learning process and is essential for elementary school students to understand natural phenomena. Through problem-solving activities, scientific methods, and imitating the way and attitude of scientists discovering new facts.

Improving the quality of education is a responsibility that must be carried out by all parties, such as schools, communities, students, principals, and especially teachers as educators. Teacher creativity in teaching will undoubtedly affect the level of student success in learning as explained by Japrizal & Irfan (2021) that learning outcomes are competencies that are inherent in a person, including knowledge, skills, and attitudes that become personal assets and enable an individual to do something. Meanwhile, science learning outcomes are the results of improvements students have obtained through the search for knowledge achieved after the science learning process. There are changes in behavior concerning cognitive, affective, and psychomotor aspects, symbolized by numbers or values. One of the things that affect student learning outcomes is the learning process. Hadidi & Setiawan (2021) explained that if the learning process is not optimal, it is tough to expect good learning outcomes. It can

be concluded that it is essential for teachers to create learning that can help students achieve good learning outcomes.

However, the science learning that teachers mainly teach is still conceptual and abstract. This aligns with Prananda's (2019) opinion that science learning is currently only teacher-centered and does not use learning media as teaching aids. Furthermore, the same opinion was expressed by Nur Jannah (2020), who said that teachers lacked exploration in using learning media during teaching and learning activities. The weakness in learning science in grade V elementary school is how the teacher conveys the material well. Deliany et al. (2019) explained that providing good science learning material with clear visualization is readily accepted by students. So it can be understood that teachers need to pour creative and innovative learning to students so knowledge transfer activities are not only limited to using conventional media.

Concerning the above, some studies state that the average teacher is not familiar with digital learning media. In line with this, Febrianto & Saputra (2020) said that many teachers still have not used interactive learning media and have not maximized the technology that exists in the 21st century. Meanwhile, if teachers do not introduce the latest learning media, students will be thirsty for technology. Furthermore, Nur Jannah (2020) revealed that these impacts would indirectly affect student learning outcomes if left unchecked. This means that student learning outcomes will be better if teachers maximize their teaching methods, one of which is by using learning media that is upgrading with the times. For this reason, in the teaching and learning process, this must be a concern for teachers in facilitating students to achieve good learning outcomes.

Based on the results of observations that researchers at SDN Beji Timur 1 have made, it turns out that learning activities have not been varied. Teachers still use conventional learning media, such as implementing learning in the classroom, using media that are often used by teachers in general, such as PowerPoint and image media. In addition, many students are bored and sleepy when learning takes place due to learning activities that still use less diverse media. Furthermore, if this is ignored, it will be challenging for students to achieve good learning outcomes, and the learning done so far will not provide a meaningful experience for students.

Responding to the above problems, teachers' efforts to improve student learning outcomes can be made in several ways or methods, one of which is using learning intermediaries, often referred to as learning media. Researchers try to propose using Google Sites-based learning media in learning activities so that students are not bored and can see the science learning outcomes that have been learned using the learning media. According to Nurrita (2018), learning media is a tool that can support the teaching and learning process so that the messages conveyed are more meaningful and the learning or teaching objectives are achieved effectively and efficiently. According to Pebriyanti et al. (2021), the advantages of learning media are that learning activities are more fun and interactive. The use of learning time is shortened, the quality of student learning increases and the teaching and learning process can take place anywhere and at any time and can improve student learning outcomes. The use of learning media is a critical learning support in the 21st century. (Efendi, 2019).

Google Sites is a web-based learning media. Davis (2018) argues that the current learning process utilizes digital-based technology. Furthermore, Rasyid & Rohani (2018) believe that digital learning media can help concretize concepts and motivate students to learn actively. Through teacher creativity, Google Sites can be more integrated. This can affect students' learning outcomes. Besides that, Suardi (2018) explains that learning can be done

anywhere and anytime. Therefore, innovation must continuously be developed. Educators must be able to facilitate their students to learn quickly and more efficiently, even though it is not only in a formal environment.

Google Sites is one of Google's website-based features. Many features in it are effortless to understand. In addition, Google Sites is made simply because it is packaged in an integrated website that can be accessed anytime and anywhere. Al-Samarraie, H., & Saeed (2018) explained that Google Sites could be used as an interactive technology platform to exchange ideas, collaborate on tasks, and for teachers to scaffold student learning and provide immediate feedback. So that students only need to use the web browser that is already available on the smartphone to open the web address and documents provided by the teacher, so students do not need another application to open it. Various learning materials and information can be provided and collected through Google Sites so that students do not fall behind on learning materials (Salsabila & Aslam, 2022).

Another advantage of website-based learning media, according to Wijayanti et al. (2020), can be felt by teachers and students, including being able to help students explore learning materials, students learn not to depend on others, support teachers in carrying out an interactive learning process and help advance the quality of teaching in schools. In addition, Wu, P., Yu, S., & Wang (2018) said. The quality of teaching materials is better since teachers can use images, sound, animations, and charts in Google Sites to provide students with a more holistic learning experience. In the Google Site feature, teachers can provide learning materials and assignments, including learning objectives, essential competencies, and much more interesting because animated images and videos accompany them. Furthermore, Salic-Hairulla et al. (2020) explained that google sites could prevent students from becoming demotivated and bored as Google Sites have the features to make the content matter enjoyable, entertaining, and easy to learn. In other words, students will be more comfortable learning.

Learning using Google Sites media can make students more active and creative in maximizing their cognitive, affective, and psychomotor abilities. Salic-Hairulla et al. (2020) explain that learning material through Google Sites media will form skills such as writing and other thinking skills, and overall student involvement and enthusiasm will form a positive attitude. Several studies regarding the use of Google Sites media have a positive impact on learning, namely research conducted by Novialdi et al. (2020), who argue that website-based learning tools can make it easier for students to understand concepts excitingly and practically. Furthermore, research by Adzkiya & Suryaman (2021) said that Google Sites media could motivate students to learn. Other research results by Ramasundrum & Sathasivam (2022) said that Using Google Sites can help students understand science concepts easily and boost their achievement. Thus, Google Sites media can positively influence student learning outcomes.

Learning media is essential to support the learning process because the strategies used in learning will provide benefits to improve the quality of learning as long as the use and utilization of learning media run smoothly. The purpose of using technology related to learning media is to improve learning outcomes. Based on previous research, it is said that using Google Sites media can provide convenience and practicality for both students and teachers in learning. Still, this study is more focused on how student learning outcomes from using google sites media. In learning science, the purpose of this study is to determine the effect of using google sites media on the learning outcomes of 5th-grade students in Natural Sciences (IPA) subjects at SDN Beji Timur.

Research Methods

The approach used in this research is a quantitative approach with the Quasi Experiment method and using the Non-equivalent Control Group Design. The quasi-experiment is designed with experimental and control groups with different treatments. The experimental group was treated with Google Sites learning media, while the control group used conventional media. This study aims to determine the effect of using Google Sites-based learning media on student learning outcomes in science subjects in grade 5 SDN Beji Timur. The time and place of this research were carried out in Semester I of the 2022/2023 academic year from June
2022 to August 2022 at SDN Beji Timur, located at Jl. Ammonia II Kujang Complex, Beji Timur, Kec. Beji, Depok City, West Java Prov. West Java.

The population in this study were all fifth-grade students of SDN Beji Timur. Meanwhile, the samples selected were 68 students from two classes, namely, class 5B with 34 students as the experimental class and class 5E with 34 students as the control class with different treatments. Class 5E was an experimental group that received treatment with Google Sites learning media, while class 5E, as a control class given treatment with conventional learning media. Before the learning activities begin following the group treatment, the two groups are given multiple choice exercise questions (pretest) to determine the extent of the group's ability before the learning begins. After the pretest, the learning begins with treatment according to each group. After the treatment between the experimental group and the control group, learning given practice questions again (posttest) to find out the extent to which students mastered the learning material provided and find out the difference in the results of the scores given to the group using Google Sites learning media and the group using conventional media.

Table 1. Research Design

Experiment	$\mathbf{O_1}$	**X**	$\mathbf{O_2}$
Control	O_3	-	O_4

Keterangan:
X: Treatment with Google Sites Media
O_1 : Pretest in experiment class
O_3 : Pretest in the control class
O_2 : Posttest in experiment class
O_4 : Posttest in the control class

In data collection techniques, researchers use test instruments to see the average learning outcomes of students from using Google Sites media and conventional learning. The test instrument used is in the form of multiple-choice questions with a total of 34 questions. Calculation of instrument validity is done with the point biserial test model. In this calculation, 34 valid items and six invalid items were obtained. The selected questions have gone through a series of tests in the form of a Validity Test test so that the selected (valid) questions can be used as test instruments given to the experimental and control groups. Furthermore, the prerequisite test is carried out in the form of a normality test and homogeneity test, and to test the hypothesis used is the independent sample t-test.

Results and Discussion

The results of data analysis in this study are to determine how the use of Google Sites-Based Learning Media on Student Learning Outcomes in Science Subjects Grade 5 SDN Beji Timur. The data analysis is based on the data normality test with the help of the IBM SPSS Statistics 25 application with the Kolmogorov Smirnov test or chi-square test with a significant level (α = 0.05). The results of the normality test addressed in table 2 of the two classes have significant results that are more than 0.05 where the data is declared normally distributed.

Table 2. Measurement Results of the Normality Test

	Kelas	**Kolmogorov Smirnov**		
		Statistic	**Df.**	**Sig.**
Science Learning Outcomes	Experiment Pretest	0,144	34	0,070
	Experiment Posttest	0,115	34	0,200
	Control Pretest	0,095	34	0,200
	Control Posttest	0,132	34	0,143

In calculating the homogeneity test with a significant level (α = 0.05), the experimental and control classes were carried out with the help of the IBM SPSS Statistics 25 application with the Fisher test model (F-test). The calculation results listed in table 5 it is obtained in one experimental class, and one control class obtained a value or result of 2.042>0.05 and stated in these results as Homogeneous.

Table 3. Homogeneity Test

Test of Homogeny of Variance					
Science Learning Outcomes	Based on Median	Lavene Statistic	df1	df2	Sig.
		2,352	1	66	0.130

After conducting the homogeneity test, the researcher calculates the hypothesis test. This test compares two independent groups to determine whether there is evidence that the population averages are statistically significantly different. In this calculation, researchers used the help of IBM SPSS Statistics 25 with the independent sample t-test test with a significant level of 0.05. In table 4 presented, the results of the independent sample t-test test show a significant value of 0.592, where the results lead to a significant value of 0.05, which means that there is no effect of the use of media H_0 which means that there is no effect of using Google Sites learning media in improving the learning outcomes of 5th-grade students of SDN Beji Timur, and H_1 There is an effect of using Google Sites learning media in improving student learning outcomes in science subjects in grade 5 SDN Beji Timur.

Table 4. T-Test Hypothesis Test

Statistical Results	**Posttest Of Experiment Group and Control Group**
Uji T	0,130
df	66
Sig (2-tailed)	0,592

The results of the hypothesis testing above show that the use of Google Sites media does not affect student learning outcomes in science subjects in grade V elementary school. This happens due to several factors. These factors can come from teachers and students. as research by Ramasundrum & Sathasivam (2022) that, many aspects contribute to the successful use of technology in the classroom, one of which is the teacher. Further research results by Ilomäki & Lakkala (2018) explain that using Google Sites depends on the teacher. Not all teachers are tech-savvy, meaning they need training and support to improve their technical skills to support student learning.

Conclusion

Based on the results of testing and discussion conducted in class 5 SDN Beji Timur Depok, it can be concluded that there is no effect of Google Sites media on student learning outcomes in Natural Science subjects. The use of Google Sites learning media can facilitate and support learning because students can learn anytime and anywhere because many features make it easy to view learning materials. The factors that influence the unsuccessful use of Google Sites-based learning media include the content in Google Sites learning media sometimes not following the environment and character of students. This research is expected to have theoretical implications, especially at the Elementary, Junior High, and Senior High Education levels. With this research, it is intended that institutions can find out whether Google Sites learning media can increase student learning outcomes and can determine the strategies that are carried out next to increase student learning outcomes. The suggestions that can be given include that other researchers can find suitable learning media because the use of Google Sites media has limitations, one of which requires a gadget or laptop that can connect to the internet.

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