

The Effect of Google Earth Media on Students' Learning Interest and Learning Outcomes in IPAS Learning for Fifth Grade at SDN Umpanga



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ABSTRACT: This study aims to determine the influence of Google Earth media on students' learning interests and learning outcomes in science learning in class V at SDN Umpanga. The study uses a quantitative approach with a quasi-experimental (quasi experimental) type of nonequivalent control group design. The experimental group (n=22) received learning using Google Earth media, while the control group (n=21) followed conventional learning. The instruments used were a learning interest questionnaire and a multiple-choice learning outcome test that had been validated. Data analysis was carried out descriptively and inferentially through t-tests and ANOVA. The results showed that there was a significant increase in students' learning interest and learning outcomes in the experimental group compared to the control group. The average student learning interest score increased from 53.32 (pretest) to 83.91 (posttest), while the control group experienced only a very small increase. Likewise, the learning outcomes, the experimental group increased from 42.48 to 83.39, while the control group only increased from 42.44 to 47.41. Statistical tests showed that the difference was significant (Sig. < 0.05). These findings show that the use of Google Earth media is able to create an engaging, interactive, and visual learning experience, thus being effective in increasing students' interest and learning outcomes. Therefore, the integration of digital media such as Google Earth in learning in elementary school can be an effective strategy to improve student learning processes and outcomes.

KEYWORDS: Google Earth, Learning Media, Learning Interest, Learning Outcomes, IPAS, Fifth Grade

INTRODUCTION

Education is a very important thing in the development of a nation. Where education can educate the life of the nation, as stated in the preamble to the 1945 Constitution of the Republic of Indonesia, namely "educate the life of the nation and participate in implementing world order". Education is the ultimate foundation in the development of individuals and society. Education is also a crucial process in character formation and development of human potential. In the context of Indonesian education, Ki Hajar Dewantara offers an in-depth guide through its principles, which focus on the harmony between the nature of nature and the nature of the times. Natural nature refers to the potential or trait inherent in each student naturally. Meanwhile, the nature of the times is the potential or condition of students that can change according to the development of the times or the culture of the surrounding community (Irianti, 2024). Ki Hadjar Dewantara's thinking can be seen in the change of the curriculum from the 2013 Curriculum (K-13) to the Independent Curriculum reflecting the government's efforts in adapting the education system to be more relevant to the needs of the times and the development of students. The Merdeka Curriculum is designed to provide more flexibility to teachers and students in the learning process, with a focus on character development, critical thinking skills, and learning independence. In contrast to K-13 which is more structured and based on the achievement of standardized competencies, the Independent Curriculum offers a more flexible approach, allowing the curriculum to be tailored to the local context and individual needs of students. By integrating technology and innovation in learning, the curriculum aims to create more meaningful and relevant learning experiences, as well as prepare students to face the global challenges of the future.

Curriculum changes encourage a transformation in curriculum paradigms and learning methods. The new paradigm is expected to include strengthening the autonomy of teachers as the main controller in the learning process, as well as reducing strict supervision that regulates and equalizes the learning process in all educational units in Indonesia (Alimuddin, 2023). Meanwhile, learning is a very essential component of education, and the process of teaching and learning activities in the classroom has a crucial role in achieving educational goals. A proper understanding of the meaning of learning is essential for

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teachers who have the ability and a good understanding of the situation in the classroom (Ariani et al., 2020). When students have a high interest in a subject, their interest in learning that subject will also be high, this will affect student learning outcomes. But sometimes not all teachers want to use the right media in delivering learning. In fact, the use of learning media is also one of the assessments of the success of the learning process itself (Lestari et al., 2023).

Previously, in the 2013 Curriculum, science and social studies lessons were taught separately. However, with the new policy in the Independent Curriculum that combines the two into IPAS, of course, it poses its own challenges for teachers and students. The teacher's books published by the government have not integrated science and social studies materials thoroughly; both are presented in one book with different chapters or topics (Rahmiyanti & Pratama, 2023). IPAS is a subject that relies heavily on various types of media, to understand the geosphere, including physical and social phenomena in the earth's layers. The use of learning media can stimulate new interests, providing students with a more immersive and varied experience through these tools. Media can present more realistic and detailed concepts and provide a comprehensive experience from concrete to abstract (Kurniawati, 2017). The use of learning media can help overcome the limitations of experiences possessed by students (Tobamba et al., 2019). Based on initial observations and conversations with grade V teachers at SDN Umpanga, in carrying out learning in science subjects, teachers have not used learning media that can attract students' interest in learning. Such an attractive medium should be able to make learning interactive, display interesting visualizations, relevant to students' learning needs and innovative. However, the researcher saw that the grade V teacher at SDN Umpanga, still using the map images in the book and still being seen asking students to take notes on the materials in the book and then immediately give assignments. During the observation process, it can be seen that learning is still centered on the teacher. So, the interaction that occurs between teachers and students during social studies learning tends to be less interactive, this makes students feel bored and their interest in learning becomes low.

According to Anis Sulistyani in Fitri et al. (2022), learning interest should involve several important indicators, namely: (1) feelings of happiness, (2) student interest, (3) student attention, and (4) student involvement. However, when viewed from the filling out of questionnaires from 22 students that have been carried out by researchers, the four indicators above seem to still have a low percentage of student activities. Those who voted agreed and strongly agreed with each question in the questionnaire indicators are shown in the following table:

Table of Percentage of Students Based on Indicators of Learning Interest in Science Lessons Class V, SDN Umpanga

No	Learning Interest Indicators	Average Score
1	Feeling good	39,8
2	Student interest	41,2
3	Student engagement	45,4
4	Student attention	41,4
Average Total Learning Interest Score		41,95

The above happened due to various factors, both from the student and the teacher. Several factors from the teacher's side include teachers who have not mastered the use of learning media and the lack of activities that can activate students' interest in learning. This is what makes the learning process monotonous so that students' interest in social studies subjects is very low. This is what causes the learning outcomes of grade V students of SDN Umpanga in the 1st semester of the 2024/2025 school year to be very low. Of the 22 students with the learning goal achievement criteria (KKTP) 75, there were only 3 students who achieved complete scores. The rest have not reached the KKTP. If these problems are not addressed, the impact can be very detrimental to the teaching and learning process and overall educational outcomes. When the learning methods or media used by teachers are not diverse, students are not actively involved and even students are not facilitated in channeling their learning interests, then the learning process tends to be monotonous and boring. Therefore, it is important to immediately find solutions that involve increasing the use of learning media and exploring children's learning interests to create a more engaging and effective learning experience.

To overcome these problems and prevent wider negative impacts, it is necessary to implement solutions that focus on increasing the use of learning media and activating students' interest in learning. One effective solution is the integration of technology in the teaching and learning process, such as the use of Google Earth. By utilizing satellite images and 3D models, students can directly explore various geographical phenomena, such as mountains, rivers, and urban areas, which will enrich their

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learning experience (Ali et al., 2024). Google Earth was originally known as Earth Viewer, a virtual globe program developed by Keyhole, Inc. The program maps the Earth's surface by combining images collected from mapping satellites, aerial photography, and globe 3D GIS technology. In 2004, Google acquired Earth Viewer and changed its name to Google Earth in 2005. Google Earth allows users to browse images of houses, cars, as well as details such as shadows of people and road signs. The background of the existing problem prompted the researcher to conduct a study entitled "The Influence of Google Earth Media on Students' Learning Interests and Learning Outcomes in Social Science Learning Class V SDN Umpanga."

LITERATURE REVIEW

The term "Medium" comes from Latin, which is the plural form of "medium" and literally means intermediary or intermediary. The National Education Association (NEA) defines media as everything that can be manipulated, seen, heard, read, or talked about, as well as the tools used for these activities (Nurfadhillah, 2021). According to Purba (2022), learning media is a very important tool in supporting the learning process, both inside and outside the classroom. To achieve an effective, active, and rewarding learning process, it is essential for teachers and students to understand the various learning media (Purba, 2022). Learning media can be described as a tool that contains information or instructional messages and can be applied in the learning process. This media serves to convey messages or information related to learning objectives. Learning media is vital to assist students in understanding new concepts, developing skills, and achieving desired competencies (Hasan et al., 2021).

In Asra's opinion, when viewed from the type of media, Google Earth is a computer-based visual media because it can only be seen but cannot emit sound or audio. Google Earth is a Virtual Globe program also known as Earth Viewer. The program maps the Earth from various points of view based on satellite mapping, 3D GIS Globes, and high-resolution photographs. Google Earth is an app that provides a complete map of the world. By typing the name of the desired place or location, we can see images of the area quickly and efficiently (Riyadi, 2021). Realia media is all real media that exists in the natural environment, such as plants, rocks, water, rice fields, and so on. According to Ariani et al. (2020), the advantages of using Google Earth as a learning medium are: 1) Making the learning process more interactive. 2). Present the material in a clearer and more engaging way. 3). Improving the quality of student learning outcomes. 4). Encourage students' positive and active attitude towards subject matter. 5). Increase efficiency in the teaching and learning process in terms of time and energy. 6). Changing the role of teachers to be more positive and productive.

An indicator of learning interest is a measure or sign that shows the extent to which a person has an interest and desire to engage in the learning process. These indicators can be in the form of various behaviors, attitudes, and conditions that indicate that a person is active and enthusiastic in learning activities. Measures that can be used as indicators of interest in Pratiwi and Bernard's (2021) research are (1) feelings of happiness, (2) student involvement, (3) student interest, (4) diligence in learning and doing assignments as well as, (5) discipline in learning (Pratiwi & Bernard, 2021).

Dhaki said student learning outcomes refer to academic achievements obtained through exams, assignments, and active involvement in asking and answering questions, which contribute to these achievements (Somayana, 2020). Another opinion says learning outcomes are the achievements that students obtain after receiving instruction over a certain period. These results can also be considered as an illustration of the learning efforts made. Ideally, the more diligent students are in their efforts, the better the results they can achieve. Therefore, learning outcomes can be used as one of the indicators to assess the success of the learning process experienced by students (Yandi et al., 2023). Meanwhile, according to Magdalena, learning outcomes are numbers or scores obtained after the test at the end of each learning session. The grades obtained by students are used as a benchmark to evaluate how well students understand the subject matter (Magdalena et al., 2021).

Social studies is a study that integrates various social sciences and humanities to develop civic skills. In the school program, social studies studies in a systematic and coordinated manner various disciplines such as anthropology, archaeology, economics, geography, history, law, philosophy, political science, psychology, religion, sociology, and includes humanities, mathematics, and natural sciences (Musyarofah & Suma, 2021).

RESEARCH METHODS

This research is a quantitative research using a quasi-experimental method. The independent variable in this study was Google Earth media (X), while the bound variables were learning interest (Y_1) and learning outcomes (Y_2). The research design used was pre-response and post-response with a nonequivalent control group design, which is a design that uses experimental groups and control groups that are not selected at full randomization, as well as using test and non-test instruments (questionnaires). The research design can be described as follows:

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$$\frac{\text{Experimental Classes: } O_1 \text{ --- } X \text{ --- } O_2}{\text{Control Class: } O_3 \text{ --- } O_4}$$

This research was carried out at SDN Umpanga, West Bungku District, Morowali Regency, Central Sulawesi Province, in the odd semester of the 2024/2025 school year, namely from February to March 2025. The population in this study is all grade V students of SDN Umpanga. The sample used was two classes, namely the VA class (22 students) as an experimental class and the VB class (21 students) as a control class. The sampling technique used is total sampling with the determination of experimental class and control is carried out randomly (random sampling).

Class	Man	Woman	Sum	Group
VA	16	6	22	Eksperimen
VB	11	10	21	Control
Total	27	16	43	

Variables and Operational Definitions of independent variables (X) of Google Earth Media, which are virtual globe applications that display satellite imagery, 3D maps, and geospatial information of the world interactively, dependent variables Y₁ (Learning Interest): Based on the indicators of Fitri et al. (2022), namely: (1) feelings of pleasure, (2) interest, (3) attention, and (4) student involvement, Y₂ (Learning Outcomes): Students' academic achievement measured by multiple-choice tests in science subjects. Primary Data: Obtained from the results of filling out questionnaires and student learning outcome tests, secondary data was obtained from grade documents, school archives, and DAPODIK data from SDN Umpanga. The research instrument for the learning interest questionnaire contains 20 statements using a Likert scale of 1–5. It was developed based on indicators from Fitri et al. (2022), and has undergone validity and reliability tests.

The learning outcome test, a multiple-choice test prepared for pretest and posttest, consists of 23 valid questions, the material refers to the IPAS curriculum of class V. Documentation includes teaching modules, LKPD, diary, and photo documentation of learning activities. The research instrument was a learning interest questionnaire, a closed questionnaire of 20 items, a likert scale, 5 points, validity of all valid items (Sig. < 0.05), reliability of Cronbach's Alpha = 0.780 (high category)

Tabel Contoh Hasil Uji Validitas Angket Minat Belajar

No Question	Sig. (2-tailed)	Criterion	No Question	Sig. (2-tailed)	Criterion
1	0.046	Valid	11	0.003	Valid
2	0.012	Valid	12	0.033	Valid
3	0.034	Valid	13	0.047	Valid
4	0.024	Valid	14	0.021	Valid
5	0.005	Valid	15	0.000	Valid
6	0.022	Valid	16	0.030	Valid
7	0.029	Valid	17	0.002	Valid
8	0.018	Valid	18	0.005	Valid
9	0.043	Valid	19	0.011	Valid
10	0.009	Valid	20	0.038	Valid

Learning outcome test multiple-choice form initial number of 30 questions, valid 23 questions reliability Cronbach's Alpha = 0.896 (very high category)

Table of Examples of Learning Outcome Test Validity Test Results

No Question	Sig. (2-tailed)	Criterion	No Question	Sig. (2-tailed)	Criterion
1	0.005	Valid	16	0.022	Valid
2	0.052	Invalid	17	0.002	Valid

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3	0.000	Valid	18	-0.703	Invalid
4	0.000	Valid	19	0.010	Valid
5	0.000	Valid	20	0.002	Valid
6	0.000	Valid	21	0.001	Valid
7	0.039	Valid	22	0.000	Valid
8	0.133	Invalid	23	0.004	Valid
9	0.000	Valid	24	0.054	Invalid
10	0.001	Valid	25	0.091	Valid
11	0.384	Invalid	26	0.003	Valid
12	0.000	Valid	27	0.001	Valid
13	0.000	Valid	28	0.048	Valid
14	0.002	Valid	29	0.054	Invalid
15	0.247	Invalid	30	0.006	Valid

Data collection in this study was carried out through two stages, namely before and after treatment, to obtain a complete picture of the influence of Google Earth media on students' interests and learning outcomes. The instruments used consisted of learning interest questionnaires and learning outcome tests. Questionnaires were given in the form of pre-response and post-response, which aimed to measure changes in students' learning interests before and after learning with Google Earth media. Meanwhile, learning outcome tests are used in the form of pretest and posttest to find out the extent of the improvement in mastery of IPAS material achieved by students as a result of the use of these media. Before being used in data collection, all instruments are tested for validity and reliability to ensure that the measuring instrument used is truly capable of measuring what should be measured consistently. The validity test was carried out using the Pearson Product Moment technique through the SPSS application version 22.0. The results of the analysis showed that all items on the questionnaire and test had a significance value below 0.05 and a positive correlation, so it can be concluded that the instrument is valid. Furthermore, the reliability test was carried out using Cronbach's Alpha, which showed that the learning interest questionnaire instrument had a reliability value of 0.780 and was classified as high. Meanwhile, the learning outcome test has a reliability value of 0.896 which is included in the very high category. Thus, both instruments were declared feasible and reliable to be used in this study.

To analyze the data on students' learning interests, a descriptive statistical formula was used in the form of calculating the percentage of scores obtained by students, with the following formula: $P = \frac{S}{S_{max}} \times 100\%$ (Remarks: P = Percentage of score, S = Score obtained by students, S_{max} = Maximum score. Meanwhile, to categorize student learning outcomes, criteria from the Ministry of Education and Culture (2017) were used which grouped the following scores: scores of 93–100 were categorized as very high, 84–92 high, 75–83 moderate, and 0–74 low. Normality and Homogeneity Test.

Before the inferential analysis is carried out, a prerequisite test is first carried out in the form of a data normality and homogeneity test, the normality test aims to find out whether the data obtained is distributed normally. The test was conducted using the Shapiro-Wilk test through SPSS version 22.0, and the results showed that the entire data had a significance value of more than 0.05, which means that the data was normally distributed.

Control Group Data Normality Test Table

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pre_minat	.144	21	.200*	.923	21	.099
pos_minat	.132	21	.200*	.917	21	.077
pre_Hasil	.123	21	.200*	.973	21	.801
Pos_hasil	.161	21	.166	.972	21	.785
This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

H0: Normal population distribution, if Sig. > 0.05, H0 is accepted

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H1: Normal population distribution, if Sig. ≤ 0.05 , H0 is rejected

From Table 3.15 all Sig. values are obtained, > 0.05 means that H0 is accepted. It was concluded that the interest data and learning outcomes of the control group were distributed normally.

Normality Test Table of Experimental Group Data

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre_Interest_ekp	.151	22	.200*	.917	22	.064
Pos_Interest_Eks	.128	22	.200*	.932	22	.133
Pre_Result_Ekp	.167	22	.110	.950	22	.322
Pos_Result_Ekp	.142	22	.200*	.957	22	.437
his is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

From the Experiment Group Data Normality Test Table, all Sig. > 0.05 values were obtained, meaning H0 was accepted. It was concluded that the interest data and learning outcomes of the experimental group were distributed normally. After that, a homogeneity test was carried out using the Levene's Test to find out the similarity of variance between groups. The test results showed that the significance value was also more than 0.05, which means that the data from the experimental and control groups had homogeneous variance. With the fulfillment of these two prerequisites, the analysis can be continued using parametric statistical methods.

Homogeneity Test Table of Experimental and Control Groups

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
	Based on Mean	.274	1	41	.604
	Based on Median	.345	1	41	.560
	Based on Median and with adjusted df	.345	1	40.389	.560
	Based on trimmed mean	.282	1	41	.598

H0: Normal population distribution, if Sig. > 0.05 , H0 is accepted

H1: Normal population distribution, if Sig. ≤ 0.05 , H0 is preached

From Table 3.17, the results of the homogeneity test obtained all Sig. values > 0.05 , which means that H0 is accepted. It was concluded that the data on learning interests and learning outcomes came from two homogeneous groups.

The inferential analysis in this study aims to test the hypothesis regarding the influence of Google Earth media on students' learning interests and learning outcomes. The analysis techniques used were adjusted to the results of the prerequisite test. Because the data met the assumptions of normality and homogeneity, the test was carried out using a two-way ANOVA test. However, if under certain conditions the data does not meet the parametric requirements, then the Friedman non-parametric test is used as an alternative. The tests were carried out with the help of SPSS software version 22.0. The hypothesis tested in this study consists of two, namely H₀ which states that there is no influence of Google Earth media on students' interests and learning outcomes, and H₁ which states that there is an influence of Google Earth media on both. The decision-making criteria are based on significance values, where if the Sig. value ≥ 0.05 then H₀ is accepted, while if the Sig. value < 0.05 then H₀ is rejected and H₁ is accepted. With this analysis approach, it is hoped that accurate and scientifically accountable results will be obtained.

RESULT

This research was carried out at SDN Umpanga, which is located in Umpanga Village, West Bungku District, Morowali Regency, Central Sulawesi Province. This school is located in the industrial circle, adjacent to Topogaro Village which is the location of the palm oil factory. In addition, the location of SDN Umpanga is also very close to the mining area managed by PT. BTIIG, so that the school environment is under the direct influence of surrounding industrial activities. SDN Umpanga is under the auspices

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of the Morowali Regency Regional Education and Culture Office and has been established since 1983. Until now, the school has educators and education staff consisting of 1 principal, 10 teachers, and 1 administrative staff. Based on data recorded on the DAPODIK system, the number of students enrolled at SDN Umpanga reached 175 people. In this study, the subjects involved amounted to 43 students from class V, which were divided into two groups. A total of 22 students from the VA class were designated as the experimental group, while 21 students from the VB class were assigned as the control group. The learning process was carried out in 8 meetings, with details of 6 meetings in the experimental class and 2 meetings in the control class. In the experimental group, the implementation consisted of 1 pretest, 4 learning meetings using Google Earth media, and ended with 1 posttest. Meanwhile, in the control group, 1 pretest and 1 posttest were carried out, without special treatment in learning.

Results of the analysis of research instruments

The implementation of the research began with the validation of the instrument, namely a learning interest questionnaire and a learning outcome test, which was tested on 30 grade V students who had studied the related material. Because the number of grade V students at SDN Umpanga is only 24 people, the researcher added 6 students from SDN 2 Wosu. After the instrument was declared valid, an initial meeting was held in the form of an introduction to activities and a pretest in the experimental class and the control class on the same day at different times. The pretest includes filling out a learning interest questionnaire and an initial test to measure students' basic abilities. Learning is carried out using the Google Earth application to encourage active student engagement. The researcher also prepared a social studies teaching module for 4 meetings with the topic "Indonesiaku Kaya Raya" as a guide during the learning process in the experimental class.

Description of Learning Interest Data

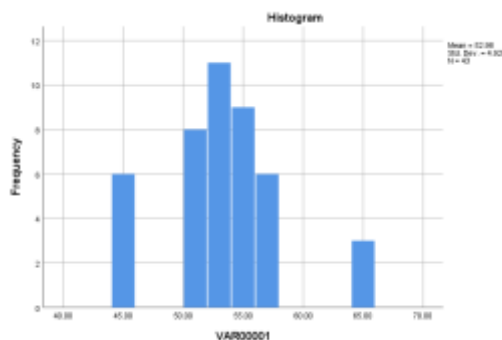
After the learning interest questionnaire is distributed and filled out by students before and after learning using Google Earth media, a summary of the results of both the preresponds and postresponders is obtained as seen in the following table:

Learning Interest Data Description Table

Descriptive Statistics Interest in Learning				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Control Class Pre-test	21	52.62	1.015	4.653
Control Class Post-test	21	54.14	.944	4.328
Pre-test Kelas Eksperimen	22	53.32	1.121	5.259
Experiment Class Post-Test	22	83.91	.935	4.385

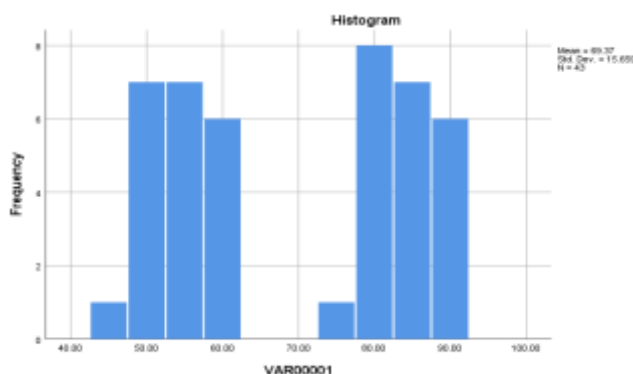
The table of description of learning interest data shows that before treatment, the average student learning interest in the experimental and control groups was almost the same. However, after the application of Google Earth media, students' learning interest in the experimental group increased significantly with a difference of 29.77 points, which shows the effectiveness of the media in increasing learning interest. Descriptively, students who study with Google Earth have a higher interest in learning than those who do not. This improvement was also seen in the histogram of changes in learning interest before and after treatment.

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Visualization of the frequency of learning interest before treatment

Figure 4.1 shows that before the implementation of Google Earth media, the majority of students' interests were in the range of 50 to 55 which means that their interest was in the medium criteria, both from the experimental class and the control class.



Visualization of the frequency of learning interest after treatment

From figure 4.2, it can be seen that there is a group of students who have a score of around 50-60 and another group has a score of 80-90. When compared to the pre-test score (average 52.98), the average post-test increased to 69.37, indicating a significant increase in learning interest, meaning that the intervention or learning activity provided succeeded in increasing students' interest in learning.

Table of Results of the Google Earth influence test on Learning interest

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Value	Equal variances assumed	.001	.974	-22.39	41	.000	-29.76	1.32	-32.45	-27.08
	Equal variances not assumed			-22.40	40.95	.000	-29.76	1.32	-32.45	-27.08

In Table 4.2, Levene's Test for Equality of Variances $F=0.001$ can be seen with the number $Sig. = 0.974 > 0.05$, which means that the population variance of the two groups is equal or homogeneous. In the t-test for Equality of Means line, $Sig. (2-tailed)$ of

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$0.000 < 0.05$ or H_0 is rejected. Thus, the hypothesis proposed was tested by data, so it was concluded that the learning interest of students taught using GE media was higher than that of students taught without using GE.

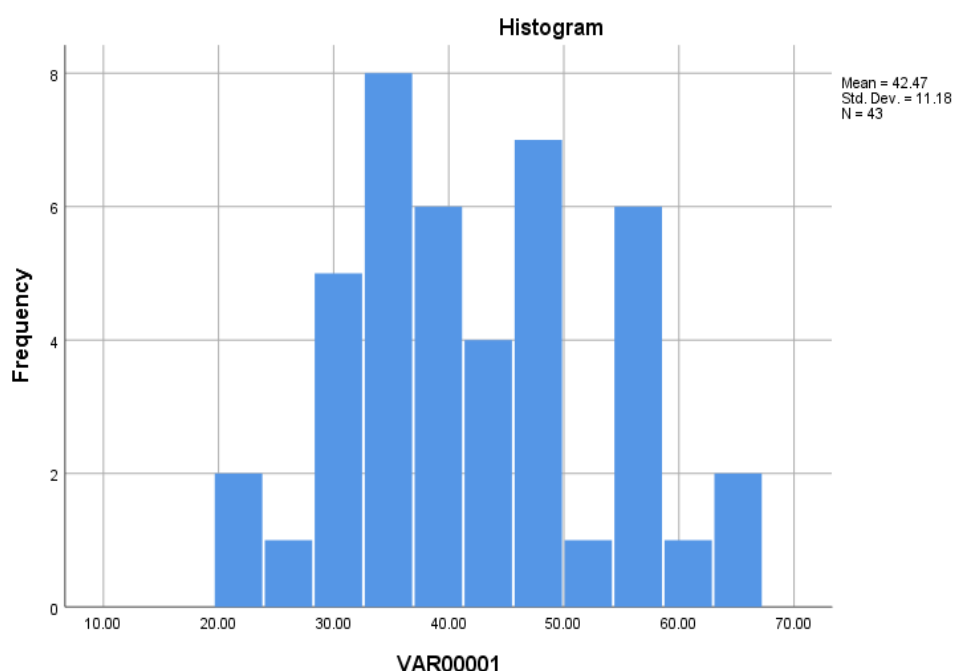
Description Learning Outcomes

Statistical descriptions of student learning outcome data processed with SPSS are presented in Table

Table Description Statistics of learning outcomes

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Control Class Pre-test	21	42.44	2.57	11.82
Control-Class Post-test	21	47.41	2.45	11.24
Pre-test Class Eksperimen	22	42.48	2.30	10.81
Pos-test Class Eksperimen	22	83.39	1.55	7.30

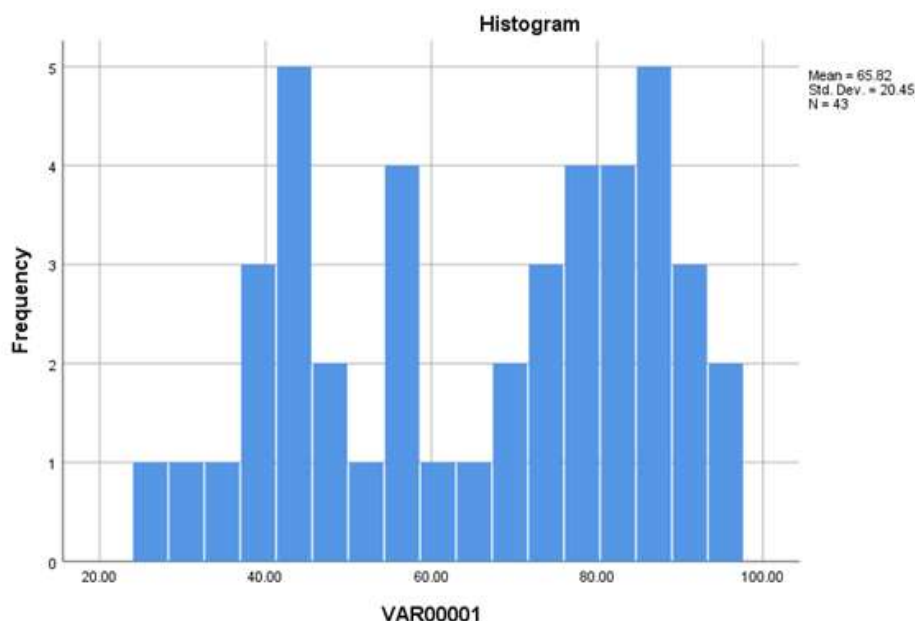
The learning outcome data in Table 4.3 shows significant development. Before treatment, the experimental group had an average pre-test score (42.48) while the control group (42.44), which showed that the initial ability of students in the experimental group and the control group was balanced because there was only a difference (0.04 points). However, after the treatment using Google Earth media, the experimental group's post-test score increased drastically to 83.39 far exceeding the control group's score of only 47.41. The high score increase in the experimental group indicates that the use of Google Earth media is very effective in improving student learning outcomes, especially for those who initially have lower abilities.



Visualization of the frequency of learning outcomes before treatment

From figure 4.3, it can be seen that the majority of students get a score, the average score is 43.14 and the standard deviation is 11.18 which means that there is a considerable spread of grades.

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Visualization of the frequency of learning outcomes after treatment

From figure 4.4, the average data is tilted to the right with the majority of values in the range of 75-90. The peak frequency was at a score of 80-85, followed by the 85-90 group. This suggests that there is an increase in value that occurs in some groups. Because in this study 2 large groups were used, namely the control group and the experimental group, it can be seen that the experimental group has experienced a significant increase.

Table of Results of the Google Earth Influence Test on Learning Outcomes

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Student Learning Outcomes	Equal variances assumed	3.745	.060	-12.50	41	.000	-35.98	2.87	-41.80	-30.17
	Equal variances not assumed			-12.38	34.085	.000	-35.98	2.90	-41.89	-30.08

In the table of the results of the Google Earth influence test on learning outcomes, it can be seen that Levene's Test for Equality of Variances $F=0.35$ with the number $Sig. = 0.56 > 0.05$, which means that the population variance of the two groups is the same or homogeneous. In the t-test line for Equality of Means, a $Sig. (2-tailed)$ of $0.00 < 0.05$ or H_0 is rejected. Thus, the hypothesis proposed was tested by data, so it was concluded that the learning outcomes of students taught using GE media were higher than those of students taught without using GE.

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Test the Influence of Google Earth on Learning Interests and Learning Outcomes

Table of Data Processing Results of the GE Influence Test on MB and HB

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16626.882	1	16626.882	121.385	.000 ^b
	Residual	11506.024	84	136.976		
	Total	28132.905	85			
a. Dependent Variable: Value						
b. Predictors: (Constant), Class						

From the results of the analysis extracted in Table 4.5, the statistical value of $F = 121,385$ and $\text{Sig.} = 0.000 < 0.05$, or H_0 was rejected. This means that there is a linear influence of the GE variable on MB and HB. In other words, it is concluded that there is a GE against MB and HB together (simultaneously).

Test Table of Significance of GE's Influence on MB and HB

Model Summary				
Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.769 ^a	.591	.586	11.70369
a. Predictors: (Constant), Class				

From Table 4.6, the double correlation coefficient $R = 0.066$ and F calculation or F change = 30.086, and $\text{Sig.} = 0.018 < 0.05$ or H_0 are rejected. Thus, the double correlation coefficient of GE with MB and HB is significant or significant. The magnitude of the effect size of GE on MB and HB is shown by the determination coefficient R Square = 0.604 which means that the effect of GE on MB and HB together is 60.4%.

DISCUSSION

The results of research that have been carried out regarding the influence of the use of Google Earth media on students' learning interests and learning outcomes in science subjects class V of SDN Umpanga. The discussion focused on three main points: (1) The influence of Google Earth media on students' learning interests and (2) The influence of Google Earth media on student learning outcomes.

The Influence of Google Earth Media on Students' Learning Interests

The results of the descriptive analysis showed that the average pretest score of learning interest in the experimental class was 53.32, and after learning using Google Earth media, the score increased to 83.91. In contrast, in the control class there was only a small increase, from 52.62 to 54.14. The results of the t-test prove that this difference is significant ($\text{Sig.} 0.00 < 0.05$), which means that the use of Google Earth media has a real impact on increasing students' interest in learning. This increase in interest in learning can be seen from the four indicators observed, namely students' feelings of pleasure, interest, attention, and involvement. During the learning process, students seemed very enthusiastic because they felt as if they were doing a virtual exploration. The 3D visualizations displayed by Google Earth managed to grab their attention, and the satellite imagery features made the material feel more real and interesting. Topics in IPAS related to geographical conditions and natural resources also become easier to understand because they can be directly seen in the context of the actual location. Before learning begins, the experimental class teacher is first briefed on how to use Google Earth. The IPAS material taught consists of four topics, including "How to Form My Indonesia", "My Indonesia Rich in Biodiversity", and "My Indonesia Rich in Nature". At the initial meeting, the teacher introduced the learning theme as well as how to access media using a Chromebook. Although the number of devices is not enough for all students, learning still runs smoothly because it is carried out in groups. This not only overcomes the limitations of tools, but also increases cooperation between students.

During the activity, students looked happy and active. They chuckled with their friends when they managed to find a certain region on Google Earth. For example, in the topic "How to Form My Indonesia", students are asked to explore the region where they live and identify the characteristics of an agrarian or maritime country. When discussing "Indonesiaku Kaya Hayatinya", they initially had difficulty distinguishing between biological and non-biological resources, but after seeing examples directly

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through images on Google Earth, they became more understanding. Likewise, when discussing "My Indonesia Rich in Nature", students focus on observing various natural resources and their damage through satellite imagery, which makes learning feel more real and touching. Student involvement is also very high. They are active in discussions, presentations in front of the class, and helping group friends who don't understand how to use Google Earth. In other words, this media is not only visually appealing, but also manages to create a collaborative and interactive learning atmosphere.

In contrast to the experimental class, the students in the control class looked less interested. Learning only uses textbooks, without supporting media, so learning activities become passive. Students tend to just sit, read, and listen to the teacher's explanations without showing any meaningful enthusiasm. The significant difference in pretest and posttest results between the two classes shows that the use of Google Earth can significantly increase students' interest in learning. These findings are supported by the research of Putra & El Yunusi (2024), who stated that the application of Google Earth in social studies learning can attract students' interest through interactive visual features. This is also in line with John Dewey's view in Kerchner (2011), who stated that interest is the main trigger in the learning process, especially when facilitated by digital media. Media such as Google Earth opens up a wide space for students to learn actively, collaboratively, and imaginatively.

The Influence of Google Earth Media on Student Learning Outcomes

To find out the extent to which the use of Google Earth media affects learning outcomes, the following discussion will describe the comparison of data between the experimental group and the control group in detail. The data on learning outcomes in the experimental group underwent a huge change. The average pre-test score of students in the experimental class was 41.36, and it changed significantly to 81.82 at the post-test. This improvement shows a very positive change in students' understanding of the material after the implementation of Google Earth learning media. On the other hand, the control group that did not receive similar treatment actually showed relatively low results, from 45.00 in the pre-test to 43.57 in the post-test. This indicates that conventional learning that still relies on lecture methods and static media is not able to have a meaningful impact on students' mastery of material. The striking differences between the two groups prove that interactive media such as Google Earth is able to increase the attractiveness and effectiveness of learning. This medium not only provides concrete and engaging visualization, but also allows students to conduct hands-on exploration of geographic objects virtually. Active involvement of students in exploring maps, locations, and earth phenomena through Google Earth features encourages more meaningful and contextual learning. This makes students' memories of the material they have received more durable.

In the experimental class, when learning activities took place, it was seen that students paid more attention to what the teacher conveyed, both through the visualization displayed by the Google Earth media and from the questions submitted by the teacher. Even when there are things that students don't understand from the Google Earth visualization display spontaneously, students immediately ask questions and the teacher also immediately explains in detail what is not understood. Teachers can provide explanations faster because the media can make it easier for teachers to convey the purpose and purpose of the material being studied. So that when the teacher asks students to answer, then students are able to answer the oral questions given by the teacher correctly. It is different from the treatment in the control class that applies conventional learning methods without supporting media. Students look more sleepy and often go in and out of class. Although some students do stay in class to listen to the teacher, they seem to be less active and less excited. This greatly affects students' absorption of the material delivered by the teacher. This makes it difficult for students to answer the oral questions posed by the teacher.

This research is in line with research conducted by Ariani et al. (2020), Google Earth media has a significant impact on student learning outcomes because it presents information in an interactive and fun way, thus encouraging students to be more focused, active, and motivated in participating in learning. Likewise, the opinion of Ali et al. (2024), who states that the use of technology-based media can increase students' cognitive involvement or in other words directly engage with students' thinking and memory which makes it easy for students to remember material.

Based on the results of statistical analysis, an F value of 30.086 was obtained with a significance value (Sig.) of 0.018. Since the significance value is smaller than the set significance limit (0.05), it can be concluded that the null hypothesis (H_0) is rejected. This means that the use of Google Earth (GE) media has a significant effect on students' learning interest (MB) and learning outcomes (HB). In other words, there is a real simultaneous influence of Google Earth variables on both variables. This means that the application of GE media in the learning process not only affects students' interests, but also affects the achievement of their overall learning outcomes.

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CONCLUSION

Based on the results of the research and discussion in the previous chapter, it can be concluded that the use of Google Earth media has a positive effect on increasing the learning interest of grade V students of SDN Umpanga in science subjects. This media is able to increase students' feelings of pleasure, interest, attention, and involvement in the learning process. ISWA became more active in asking questions and discussing, because they felt that the learning they participated in was relevant and interesting. In addition, the use of this media also creates a more lively and contextual learning atmosphere, so that students do not feel bored or bored. Google Earth media also has a significant effect on student learning outcomes. Interactive and realistic visualizations make it easier for students to understand the learning material and improve their academic achievement. Thus, previously abstract concepts become more concrete, and students can relate the material to the visual experiences they gain. This deeper understanding is then reflected in the improvement of test and assignment scores, as well as students' ability to reinterpret the material orally and in writing.

Based on the exposure of the findings and conclusions in this study, the suggestions that researchers can give to related parties include, among others, students are expected to be more active and open in trying technology-based learning media such as Google Earth in order to understand the material better and achieve maximum learning outcomes. Teachers are advised to use more technology-based learning media such as Google Earth in science subjects to increase students' interest and learning outcomes. Schools need to provide supporting facilities, such as computer devices and internet access, so that the integration of digital media in learning can run optimally. Further research is suggested to test the effectiveness of Google Earth media in other subjects as well as at different levels of education to expand the use of this media in the world of education. In addition, researchers can further develop a structured Google Earth-based learning model, so that its implementation is more systematic and easily adopted by teachers in other elementary schools.

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