

Improving Social Studies Learning Media Literacy in Elementary School Students Through Virtual Tour Media of Lebak Local Products

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Abstract. *This study aims to develop learning media based on virtual tours of local products in Lebak Regency and measure its effectiveness in improving media literacy and understanding of social studies learning concepts of elementary school students. The method used was an experiment with a pretest-posttest control group design, involving 64 grade IV students who were divided into two groups: an experimental group that used virtual tour media and a control group that used conventional learning methods. The virtual tour media is designed to introduce Lebak's local products, such as handicrafts, typical foods, and the production process, so that students can learn interactively without distance and time restrictions. Data was obtained through media literacy tests, social studies comprehension tests, observation sheets, and student response questionnaires. Data analysis was carried out using parametric statistical tests, including normality tests, homogeneity, independent sample t-tests, and normalized gain analysis (N-Gain). The results showed that the experimental group experienced a significant increase in media literacy and social studies comprehension compared to the control group. In addition, students in the experimental group responded positively to the use of virtual tour media. The virtual tour media has proven to be effective not only to increase students' understanding of the learning material, but also to strengthen their appreciation of local wisdom. The recommendation for further research is the development of similar media that can be implemented in other subjects with different local contexts.*

Keywords: Media Literacy, Virtual Tour, Social Studies Learning, Lebak Local Products Literasi

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INTRODUCTION

Social Science learning in elementary schools has a strategic role in shaping students' ability to understand society, culture, and their environment (Fauzi, 2020; N. A. P. Lestari et al., 2023; Mafrudin, 2023). Social studies aims to help students recognize themselves as part of society and prepare them to face various social challenges in the future (Mustakim et al., 2024). In addition, social studies are designed to instill social values, such as tolerance, cooperation, and a sense of responsibility, which are the basis of community life (Surahman & Mukminan, 2017). This is in line with Syarifuddin et al (2024), who emphasized that social studies function to build students' awareness of their social and cultural environment, so that they can become active and responsible citizens.

In addition to social values, social studies learning also aims to develop students' critical thinking skills (Matias, 2020; Mensah, 2020). This skill is important for students to be able to analyze a variety of complex social problems, make informed decisions, and contribute to solving

them (Ahmad et al., 2022). This critical thinking ability is especially relevant in the era of globalization, where students are faced with a variety of information that requires deep understanding and critical evaluation (Safitri, 2021). Thus, social studies is not only a subject that teaches knowledge, but also shapes 21st-century character and skills (Sari et al., 2021; Zummi et al., 2020).

However, although the role of social studies is very important, its implementation in elementary schools often encounters obstacles. One of the main challenges is the use of less innovative learning methods and media, making it difficult for students to understand abstract concepts such as social interaction, economic activities, or cultural change (Nicolaou et al., 2019; Tang et al., 2022). This condition is also found in elementary schools in Lebak Regency, where most students are more familiar with lecture learning methods and the use of textbooks, which tend to be monotonous and less attractive to their learning interests.

Previous research has shown that the integration of technology in learning has a significant impact on student engagement and learning outcomes. For example, research by Fitria (2023) found that the use of technology-based media such as virtual tours increases students' interest in learning. Virtual tours allow students to explore specific places interactively, which they cannot visit in person, thus providing a more engaging and immersive learning experience. This is in line with the findings of Nurjanah & Poernomo (2024), which shows that exploration-based digital learning media improves students' ability to understand concepts compared to conventional methods.

In addition, research by Ratih et al (2024) revealed that learning based on local wisdom helps students to better understand local cultural values. Through the integration of local elements into the learning materials, students not only gain academic knowledge, but also build a sense of pride in their cultural heritage (da et al., 2024; Hayati et al., 2024). In line with that, the research of Arjaya et al. (2024), Febrian et al. (2024) and Prasetyo et al. (2024) highlighted that an approach based on local wisdom increases students' motivation to learn, especially in social studies learning. This approach provides contextual experiences that are relevant to students' daily lives, thus helping them relate the learning material to the social realities around them.

Technology has also proven to be effective in supporting learning based on local wisdom (Lestari et al., 2024; Susanto et al., 2023). A study by Hajar et al (2023), Kisno et al (2022) and Kristiana & Yuliana (2022) shows that the combination of digital technology and local wisdom, such as virtual tours about local traditions and products, provides a synergistic effect in increasing students' understanding and appreciation of local culture. It also facilitates 21st-century skills, such as media literacy and critical thinking, which are crucial in the era of globalization. These researches are an important foundation for developing innovative learning media such as virtual tours based on Lebak local products. This media is not only expected to increase students' media literacy, but also strengthen their understanding of local wisdom as part of social studies learning.

Lebak Regency, located in Banten Province, is known as one of the areas rich in local wisdom. A variety of local products such as handicrafts from bamboo weaving, Baduy weaving, palm sugar, to special foods such as opak and ranginang are the hallmarks of this region's culture. These products not only reflect the wealth of natural resources but also the uniqueness of the culture of the Lebak people who still maintain their ancestral traditions. This potential is very relevant to be used as a teaching material based on local wisdom in social science learning. Integrating local wisdom in social studies learning helps students to recognize, appreciate, and preserve their local culture, as well as increase understanding of the relationship between human activities and the environment (Kamila et al., 2024).

Unfortunately, this potential has not been utilized optimally in social studies learning in elementary schools, especially in Lebak Regency. Based on initial observations, most social studies learning still uses conventional approaches, such as textbooks and lectures, which tend to be monotonous and non-contextual. Students have difficulty understanding abstract concepts,

such as economic activities and social interaction, because learning media are less relevant to their daily lives (Fitria, 2023). This limitation creates a need for innovative learning media that are not only interesting but also relevant to the local context.

Virtual tour media is one of the relevant innovations to overcome this limitation. Virtual tours are technology-based interactive learning media that allow students to explore specific places or objects virtually through images, videos, or three-dimensional simulations (Amriana et al., 2023). In the context of Lebak Regency, virtual tours can be designed to introduce students to the process of making local products, such as woven crafts, palm sugar processing, or making typical foods. Through this medium, students can digitally "visit" local production sites without distance and time restrictions. This media also helps to overcome logistical barriers, such as the difficulty of conducting direct visits to production sites, which is often an obstacle in elementary schools in remote areas (Bekteshi et al., 2024).

Previous research has shown that the use of virtual tours in learning can increase student engagement, interest in learning, and their understanding of subject matter. For example, a study by Fitria (2023) revealed that virtual tour media increases student learning motivation compared to traditional learning methods. Another research by Suryonegoro et al (2024) shows that technology-based media such as virtual tours improve students' ability to understand complex and abstract concepts. In the context of social studies, the integration of virtual tours based on local wisdom allows students to connect lesson concepts with the reality of their lives, thus providing a more meaningful learning experience.

This research aims to develop a virtual tour-based social studies learning media with a focus on local products in Lebak Regency. This media is expected not only to be able to improve the media literacy of elementary school students, but also to strengthen their understanding of local wisdom as part of social studies materials. Through this research, students are expected to be able to better appreciate their local culture, understand the importance of cultural preservation, and acquire media literacy skills that are relevant to the needs of the 21st century.

METHODS

This study uses an experimental method with a pretest-posttest control group design. This method involves two groups of students, namely an experimental group that uses learning media based on a virtual tour of local products in Lebak Regency and a control group that learns using conventional methods, such as lectures and textbooks. The research was conducted on 64 grade IV students at SDN Sukamanah 1 Lebak Regency, which were purposively divided into two groups with a balanced number. The research process began by giving pretests to both groups to measure students' initial abilities related to media literacy and understanding of social studies concepts. Furthermore, the experimental group received a treatment in the form of learning with virtual tour media, which is designed to introduce local products such as handicrafts, typical foods, and the production process. The learning lasted for four meetings, each lasting 90 minutes. Meanwhile, the control group carried out learning using conventional methods with the same duration and material. After the treatment was completed, a posttest was given to both groups to measure the improvement of students' abilities after learning. Data from the pretest and posttest were analyzed using statistical tests to see the difference in scores within each group and compare the rate of improvement between groups. In addition, normalized gain analysis (N-Gain) is used to measure the level of improvement in learning outcomes in a more measurable way. The research instruments included media literacy and social studies comprehension tests, observation sheets to record student involvement during learning, and questionnaires to find out students' responses to the learning media used. This study is considered successful if the experimental group shows a significant improvement compared to the control group, with the N-Gain score reaching the "medium" or "high" category and the level of student satisfaction with the virtual tour reaching more than 80%.

RESULTS AND DISCUSSION

Normality Test

The results of the normality test can be seen in the following table.

Table 1. Results of the One-Sample Kolmogorov-Smirnov Test

	Class	Kolmogorov-Smirnov ^a		
		Statistic	df	Sig.
Result	Experiment	.098	32	.200
	Control	.148	32	.190

Source: Processed by Researchers 2024

This test was carried out at SDN Sukamanah 1. The results of the normality test above showed that the media literacy skills of students in the experimental class obtained a significance value of 0.200 and the control class of 0.190, greater than the significance level (α) of 0.05. From these results, the media literacy data of students in the experimental class and control class came from a normally distributed population.

Homogeneity Test

After conducting a normality test, the researcher conducted a homogeneity test using the Levene Test. The following are the results of the data analysis:

Table 2. Homogeneity Test

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Class	Based on Mean	.078	1	62	.780
	Based on Median	.045	1	62	.833
	Based on Median and with adjusted df	.045	1	61.949	.833
	Based on trimmed mean	.076	1	62	.783

Source: Processed by Researchers 2024

The results of the homogeneity test above show that the data come from different variants. This is shown in the different significance values in the Based on Mean value, which is 0.780 which is more than 0.05. The results show homogeneous data. Based on the results of the normality test, the data were distributed normally and homogeneously showed homogeneous data. So the researcher conducted a test of the average character of students using an independent t test. The following will present the data on the results of the t-test using SPSS.

Uji Independent Sample t-Test

Table 3. Independent Sample t-Test at SDN Sukamanah 1

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Learning Outcomes	Experiment	32	89.1250	2.77953	.49136
	Control	32	85.0938	2.55721	.45205

Source: Processed by Researchers 2024

The Independent t-Test at SDN Sukamanah 1 was used to compare the average score between the experimental and control classes. The t-test statistic calculates how far the difference

between the average scores of the two groups is statistically significant. The value of sig. (2-tailed) is used to compare the test results with the set significance level of ($\alpha = 0.05$) to make statistical decisions. The results showed that there was a difference in the average score between the experimental class, which was 89,125 while the control class was 85,093. Furthermore, the researcher conducted a calculation test with an independent t test to make a decision whether to reject or accept H_0 . The data is presented in the table below:

Table 4. Independent Sample t-Test at SDN Sukamanah 1

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	f	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Results	Equal variances assumed	1.338	.780	6.038	62	.000	-4.03125	.66767	-5.36591	-2.69659
	Equal variances not assumed			6.038	61.574	.000	-4.03125	.66767	-5.36609	-2.69641

Source: Processed by Researchers 2024

The table above shows that in the experimental class, the significance value (2-tailed) of 0.000 is smaller than the significance level, which is ($\alpha = 0.05$). With a significance value smaller than the significance level, it can be concluded that there is a significant difference between the two groups, so it can be concluded that the virtual tour media Lebak local products that have been used in the experimental class are effective in improving students' media literacy, so, H_0 was rejected. After going through a series of statistical tests, the researcher at the final stage conducted an effectiveness test with the normalized gain score technique. The value of $\langle g \rangle$ can be calculated by the formula developed by Hake as follows:

$$\langle g \rangle = \frac{\text{Postscore} - \text{Prescore}}{N - \text{Prescore}}$$

Information:

$\langle g \rangle$: Normalize Gain Value

Postscore : Presentage of Post-test Scores

Prescore : Presentage of Pre-test Scores

N : Ideal value

The description of the $\langle g \rangle$ index according to Hake (2002) can be seen in the following table:

Table 5. Gain index criteria

Indeks $\langle g \rangle$	Effectiveness Criteria
$\langle g \rangle > 0.70$	Highly effective
$0.30 < \langle g \rangle < 0.70$	Effective
$\langle g \rangle \leq 0.30$	Less effective

Source: hake, 2002

The following will be presented as a recapitulation of data on the effectiveness of the virtual media tour of Lebak local products to improve media literacy in all aspects:

Table 6. Recapitulation of Data on the Effectiveness of Virtual Tour Media

No	Aspects	Class	Value Gain	Category
1	I can install and use new apps on my digital devices	Exsperiment	0,31	Effective
		Control	0,01	Less Effective
2	I can create and edit documents using productivity software (e.g. Microsoft Office, Google Docs, Capcut, etc).	Exsperiment	0,36	Effective
		Control	0,11	Less Effective
3	I can understand the meaning of different types of digital media (text, images, videos, audio).	Exsperiment	0,46	Effective
		Control	0,13	Less Effective
4	I was able to identify the main message of an article or video online.	Exsperiment	0,32	Effective
		Control	0,25	Less Effective
5	I can explain the data presented in the form of graphs or infographics	Exsperiment	0,31	Effective
		Control	0,12	Less Effective
6	I was able to edit photos or videos using the appropriate software.	Exsperiment	0,44	Effective
		Control	0,16	Less Effective
7	I can create and manage social media (IG, Tiktok, Facebook,etc), blogs or simple websites.	Exsperiment	0,32	Effective
		Control	0,04	Less Effective
8	I understand and comply with copyright and fair use in digital content.	Exsperiment	0,37	Effective
		Control	0,09	Less Effective
9	I respect the privacy of others when sharing information online.	Exsperiment	0,42	Effective
		Control	0,11	Less Effective
10	I was able to recognize and avoid cyberbullying behavior.	Exsperiment	0,31	Effective
		Control	0,20	Less Effective

Source: Processed by Researchers 2024

The table shows the comparison of gain values between the experimental class and the control class in five aspects of Social Intelligence. Overall, the experimental class showed a more significant improvement than the control class in all aspects measured. The gain values of the experimental class ranged from 0.31 to 0.46 and were all categorized as "Effective", while the gain values of the control class ranged from 0.01 to 0.25 and were all categorized as "Less Effective". This data indicates that the virtual tour media used in the experimental class is more effective in improving various aspects of media literacy compared to the method applied to the control class. These findings highlight the potential success of interventions used in experimental classrooms to improve students' media literacy.

This study shows that the data from the experimental class and the control class have a normal distribution based on the Kolmogorov-Smirnov test. The significance value of 0.200 for the experimental class and 0.190 for the control class is above the significance level of 0.05. This indicates that the data came from a normally distributed population. Thus, statistical analysis can be carried out assuming normality is met. The homogeneity test using the Levene Test also showed consistent results, where a significance value of 0.780 indicated that the data had homogeneous variance, providing a basis for further analysis. The Independent t-Test was conducted to compare the average learning outcomes between the experimental class and the control class. The results showed that there was a significant difference between the two groups, with an average score of 89.125 in the experimental class and 85.093 in the control class. The significance value (2-tailed) of 0.000 is smaller than the significance level of 0.05, which indicates that this difference is statistically significant. This provides strong evidence that the Lebak local product virtual tour media is effective in improving students' media literacy compared to conventional learning methods.

The effectiveness of the virtual media tour was also analyzed using a normalized gain score, which showed a significant improvement in various aspects of media literacy in the experimental class compared to the control class. The gain value in the experimental class ranged from 0.31 to 0.46, all of which were in the effective category, while the gain value in the control class ranged from 0.01 to 0.25 and was included in the less effective category. These results show that the use of virtual tour media has a positive impact on students' media literacy skills. Specifically, the improvement was seen in the ability of students to install applications, create documents, understand different types of digital media, and respect online privacy. For example, students' ability to edit photos or videos using appropriate software increased with a gain value of 0.44 in the experimental class, compared to only 0.16 in the control class. In addition, the ability to recognize and avoid cyberbullying behavior also showed significant differences, with a gain value of 0.31 in the experimental class compared to 0.20 in the control class.

These findings are consistent with previous research that highlights the importance of digital technology in learning to improve students' media literacy. Research such as those conducted by Kho et al (2024), Rahman & Iwan (2019) and Sirianansopa (2024) shows that normalized gain scores are an effective method to evaluate the improvement of learning outcomes in educational interventions. In addition, recent studies emphasize the role of interactive digital media (Aulia et al., 2024; Khamparia & Pandey, 2017), such as virtual tours, in creating a more engaging and meaningful learning experience for students (Fitria, 2023; Makransky & Mayer, 2022). Overall, the results of this study confirm that virtual tour media can be an effective tool in improving students' media literacy, especially in today's digital era. The implementation of this medium not only provides an innovative learning experience but also helps students develop a range of digital skills that are relevant for their future. Thus, virtual tour media deserves to continue to be developed and used as part of a technology-based learning strategy.

CONCLUSION

Based on the results of the research, the virtual tour media of Lebak local products has proven to be effective in improving students' media literacy. The normality test showed that the data in the experimental and control classes were normally distributed, while the homogeneity test showed homogeneous data variance. The results of the Independent t-Test indicated a significant difference between the average learning outcomes of the experimental class (89.125) and the control class (85.093), with a significance value of 0.000 which was smaller than 0.05. These findings confirm that the use of virtual tour media has a positive impact on learning. The effectiveness of virtual tour media is also proven through the analysis of normalized gain scores. In the experimental class, the gain value ranged from 0.31 to 0.46 and was categorized as effective, while the control class showed a gain value between 0.01 to 0.25 with the category of less effective. Significant improvements are seen in students' abilities in digital aspects, such as installing apps, editing documents, understanding different types of digital media, and respecting online privacy. This shows that the virtual tour media is able to encourage the development of media literacy skills comprehensively. These results are in line with previous research that shows that digital technology, especially interactive ones such as virtual tours, can create engaging learning experiences and improve learning outcomes. In addition, the use of digital media helps students develop skills that are relevant to the needs of the digital era. Overall, this study confirms that virtual tour media is an innovative learning tool that is effective to improve students' media literacy. By providing a more interesting and meaningful learning experience, this media has the potential to improve students' competence in facing future challenges. Therefore, the implementation of virtual tour media deserves to continue to be developed as an integral part of a technology-based learning strategy.

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