



The Impact of Learning Pjok Health Education Material Through Audio-Visual Media Learning on Knowledge and Behavior of Clean and Healthy Living in Elementary School Students 50 Bulu Datu

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ARTICLE INFO	ABSTRACT
Published Online: 03 September 2026	Health education is an effective strategy for raising awareness and fostering clean and healthy living behaviors among students. However, traditional methods such as lectures often fail to capture children's attention and are insufficiently effective in bringing about sustainable behavioral changes. Audiovisual media—technological tools that convey messages through images and sound—serve as educational aids that enhance knowledge and cognitive abilities, thereby improving students' understanding and interest in learning. This study aimed to determine the impact and effectiveness of audiovisual media-based health education on increasing knowledge and improving Clean and Healthy Living Behavior (PHBS) among students at SDN 50 Bulu Datu. A quantitative approach with an experimental design (Two-Group Pretest-Posttest Design) was employed. The study population comprised all 294 students at SDN 50 Bulu Datu; the sample consisted of 42 students from grades IV and V, selected via purposive sampling and divided into an experimental group (21 students) and a control group (21 students). Data were collected using questionnaires and observation sheets, then analyzed using the paired-samples t-test and effect size measurement. Significant improvements in students' knowledge and PHBS practices were observed following the audiovisual media intervention. In the experimental group, the mean knowledge score rose significantly from 82.38 to 94.52, while the control group saw an increase from 77.86 to 84.05. Paired-sample correlation analysis for the experimental group revealed a strong, significant positive relationship ($r=0.612$; $p=0.003$). A Cohen's d value of 0.896 indicated that the use of audiovisual media was highly effective, demonstrating a "large effect" on improving students' knowledge and PHBS practices. Health education utilizing audiovisual media proved significantly effective in increasing knowledge levels and fostering clean and healthy living behaviors (PHBS) among elementary school students. It is recommended that teachers utilize audiovisual media as an interactive learning tool within school-based health promotion programs.
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KEYWORDS: Health Education, Audiovisual Media, Clean and Healthy Living Behavior (PHBS), Elementary School.	

I. INTRODUCTION

Early childhood health education is crucial for a child's well-being, as it influences their future growth and development. Through health education, children learn the importance of healthy living. Such education covers topics including general health, physical activity, healthy eating habits, proper sleep patterns, and the importance of hygiene. School-aged children constitute a group vulnerable to health issues, making students more susceptible to illnesses that can be detrimental due to resulting school absences. The

Clean and Healthy Living Behavior (PHBS) program in schools is an effort to empower students, teachers, and the school community—enabling them to understand, be willing to adopt, and be capable of practicing clean and healthy behaviors, as well as playing an active role in creating a healthy school environment (Ervina & Hidayat, 2024).

Media serves as a supporting tool in the learning process, effectively conveying messages or information. Audiovisual media combines elements of sound and moving images—such as videos, animations, and short films. Utilizing this

type of media can capture attention, enhance understanding, and improve retention of the information presented (Octrisdey et al., 2025). Audiovisual media are technological tools capable of conveying messages through images and sound; used for educational purposes, they offer benefits such as enhancing an individual's knowledge or cognitive abilities during the learning process. The elementary school environment is a strategic setting for implementing audiovisual-based health education because children at that age. The use of media in health education and information delivery can enhance student engagement and effectiveness, depending on the type of media, its availability, and the proficiency with which it is used. The concept of media as an instructional aid is grounded in the idea that visual elements can vividly depict real-life scenarios and facilitate experiential learning; the more realistic the instructional media employed, the greater the value of the experience gained (Sasmitha et al., 2017).

The fundamental goal of physical education is to provide children with opportunities to engage in activities that both build and stimulate their potential across physical, mental, social, emotional, and moral dimensions. Physical Education is a vital component of the overall education system. The educational process employs systematically planned physical activities to enhance various aspects of the individual, including organic, neuromuscular, perceptual, cognitive, social, and emotional dimensions. Physical Education focuses primarily on developing physical fitness, movement skills, thinking skills, emotional stability, social skills, reasoning, and morality through participation in physical activities (Sari et al., 2024).

Clean and Healthy Living Behavior (PHBS) was introduced by the Ministry of Health of the Republic of Indonesia in 1995. In its implementation, this behavior encompasses five settings—namely households, educational institutions, workplaces, public places, and health institutions—with this particular study focusing on the application of PHBS in schools (Heny Wulandari, 2014). Early childhood health education involves providing health-related instruction to children from an early age, which has a significant impact on adopting healthy lifestyles, preventing disease, and improving their overall quality of life; such education helps children develop the knowledge, skills, and positive attitudes associated with health (Munzirin & Afiani, 2023). Education on clean and healthy living involves cultivating clean and healthy habits that reflect a family's lifestyle—one that consistently prioritizes and maintains cleanliness and health through conscious effort—thereby protecting family members from disease and enabling them to play an active role in community health activities (Libri Rizka Puri Windarta, 2021).

II. METHODS

This study employs an experimental design featuring two groups: an experimental group and a control group. The experimental group will receive physical education and sports instruction utilizing audiovisual media, whereas the control group will not. Data will be collected in numerical form and analyzed statistically. A two-group pretest-posttest design was employed. Measurements were taken before and after the intervention to observe changes resulting from health education delivered via audiovisual media. The population for this study consisted of all students at SDN 50 Bulu Datu Palopo (totaling 294 students), while the sample comprised 44 students from grades IV and V. Purposive sampling was the technique used for sample selection. Data collection was carried out using observation, questionnaires, and knowledge tests utilizing audiovisual media. Validity and Reliability Testing An instrument is considered valid if the calculated r-value exceeds the r-table value. The reliability test involved 42 fifth-grade students at SDN 50 Bulu Datu. A research questionnaire is deemed reliable if the Cronbach's Alpha value is greater than 0.60; conversely, if the value is less than 0.60, the research instrument is considered unreliable. Data analysis was conducted using SPSS version 27 for normality testing and the paired t-test..

III. RESULTS AND DISCUSION

The study involved 42 fifth-grade students from SDN 50 Bulu Datu as research subjects. The characteristics of the respondents were analyzed based on age and gender. The results indicate that, regarding age, 15 respondents (35.71%) were 10 years old, 25 respondents (59.52%) were 11 years old, and 2 respondents (4.76%) were 12 years old; regarding gender, 25 respondents (59.52%) were male, and 17 respondents (40.48%) were female.

A. Results of Observations of the Research Object Based on Research Variables

- Students' knowledge before and after receiving health education using audiovisual media in the experimental class.

No	Category	Knowledge		Knowledge	
		Experimental class pre-test		Experimental class post-test	
		Frequency	Percentage	Frequency	Percentage
01.00	Not enough	2	10%	-	
02.00	Enough	4	19%	-	
03.00	Good	15	71%	21	100%
Amount		21	100%	21	100%

The table shows that, prior to receiving health education using audiovisual media, students' knowledge fell into the following categories: "poor" (2 respondents, 10%), "fair" (4 respondents, 19%), and "good" (15 respondents, 71%). In contrast, after receiving the health education, the majority of

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students—specifically all 21 respondents (100%)—fell into the "good" category.

Mean Scores Based on Students' Knowledge Before and After Health Education Using Audiovisual Media Regarding Clean and Healthy Living Behavior

Eksperimental class pre-test				Eksperimental class post-test			
Mean	Min	Maks	SD	Mean	Min	Maks	SD
82.38.00	30	100	22.783	94.52.00	75	100	6.306

It can be seen that the mean knowledge score of students before receiving health education using audiovisual media was 82.38, whereas the mean knowledge score after receiving health education using audiovisual media was 94.52.

b. Students' knowledge before and after receiving health education without audiovisual media intervention in the control class.

No	Category	Knowledge		Knowledge	
		Control group pre-test		Control group post-test	
		Frequency	Percentage	Frequency	Percentage
01.00	Not enough	4	19%	-	
02.00	Enough	2	10%	1	5%
03.00	Good	15	71%	20	95%
Amount		21	100%	21	100%

The table shows that, prior to receiving health education without audiovisual media intervention, students' knowledge levels fell into the following categories: "poor" (4 respondents, 19%), "fair" (2 respondents, 10%), and "good" (15 respondents, 71%). In contrast, after receiving health education without audiovisual media intervention, the majority of students fell into the "good" category (20 respondents, 95%), while 1 respondent (5%) fell into the "fair" category.

Mean Scores of Student Knowledge Before and After Health Education (Without Audiovisual Media Intervention) Regarding Clean and Healthy Living Behavior.

Knowledge				Knowledge			
Control group pre-test				Control group post-test			
Mean	Min	Maks	SD	Mean	Min	Maks	SD
77.86	25	100	25.670	84.05.00	55	95	10.200

Based on the table, it can be seen that the mean student knowledge score prior to health education was 77.86, whereas the mean score after health education—without the intervention of audiovisual media—was 84.05.

The hypothesis of this study is that health education using audiovisual media influences the knowledge and clean and healthy living behaviors of students at SDN 50 Bulu Datu. The data normality test using the Shapiro-Wilk test is presented in the following table:

Group	Shapiro-Wilk		
	Statistic	df	Sig.
Experimental Group	0,964	20	0,618
Control group	0,944	18	0,341

Based on the Shapiro-Wilk normality test results shown in the table above, the experimental group yielded a Sig. value of 0.618—which is greater than 0.05 ($0.618 > 0.05$)—leading to the conclusion that the data for the experimental group are normally distributed; similarly, the control group yielded a Sig. value of 0.341—also greater than 0.05 ($0.341 > 0.05$)—leading to the conclusion that the data for the control group are normally distributed.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Eksperimental pre-test	39,19	21	10,274	2,242
	Eksperimental post-test	47,43	21	1,989	0,434
Pair 2	Control group pre-test	36,24	21	6,534	1,426
	Control group post-test	43,05	21	2,837	0,619

Based on the paired-samples statistics above, the experimental group's initial mean score was 39.19 (across 21 students) with a data variance of 10.274; following the intervention, the mean score for the same 21 students rose to 47.43. The variance decreased to 1.989, indicating that the students' scores became more uniform after the intervention. Thus, it can be concluded that there was an 8.24% increase in student scores following the intervention. In the control group, the pre-test mean score for the 21 students was 36.24, with a variance of 6.534; in the control group's post-test—where no special treatment was administered—the mean score rose to 43.05 (for the same 21 students), with a variance of 2.837. Thus, it can be concluded that there was a 6.81% increase in student scores, even in the absence of special treatment. Consequently, in descriptive terms, the experimental group—which received special treatment—showed a greater increase compared to the control group (which did not receive such treatment), with a difference of 1.43%.

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Eksperimental pre-test & Eksperimental Post-test	21	0,612	0,003
Pair 2	Control group pre-test & Control group post-test	21	0,048	0,837

The Correlation value (strength of the relationship) and the Sig. value (significance of the relationship). Based on the table above, the relationship between the experimental

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group's pretest and posttest scores shows a correlation value of 0.612. This value indicates a fairly strong, positive, and direct relationship; meaning that students with high pretest scores tend to achieve high posttest scores. Furthermore, the Significance (Sig.) value is 0.003; since this value (0.003) is far below the standard significance level (0.05), the relationship between the pre- and post-treatment scores in the experimental class is deemed significant. The relationship between the control group's pretest and posttest scores shows a Correlation value of 0.048. This value, which is very close to 0, indicates a very weak relationship—or virtually no correlation—between the students' initial and final scores. Additionally, the Significance (Sig.) value is 0.837. Since the Sig. value (0.837) is well above 0.05, the relationship between the pretest and posttest scores in the control class is deemed not significant.

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Eksperimental pre-test - Eksperimental Post-test	8,238	9,192	2,006	12,422	4,054	4,107	20	0,001
Pair 2	Control group pre-test & Control group post-test	6,81	6,997	1,527	9,995	3,624	4,46	20	0,000

Based on the table above, the mean difference for the experimental group was 8.238. Thus, the average score increased by 8.238 following the experimental treatment, with a calculated t-value of 4.107 (df = 20) and a significance value (Sig. 2-tailed) of < .001 (indicating a value well below 0.001, or approaching zero). Consequently, since the Sig. value was < 0.05 (and indeed < 0.001), the null hypothesis (H₀) was rejected and the alternative hypothesis (H_a) was accepted. This indicates a highly significant effect or difference in the experimental group's scores between the pre-treatment and post-treatment stages. For the control group, the mean difference was 6.810. This means the average score in the control group also rose by 6.810—despite the absence of the experimental treatment—likely due to factors such as standard instruction or a test-retest effect; the calculated t-value was 4.460 (df = 20), and the significance value (Sig. 2-tailed) was likewise < .001. Therefore, since the Sig. value was < 0.05, the control group also demonstrated a significant difference or increase in scores between the pretest and posttest.

Paired Samples Effect Sizes						
			Standardized ^a	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Eksperimental pre-test - Eksperimental Post-test	Cohen's d	9,192	0,896	1,397	0,379
		Hedges' correction	9,369	0,879	1,371	0,372
Pair 2	Control group pre-test & Control group post-test	Cohen's d	6,997	0,973	1,487	0,443
		Hedges' correction	7,132	0,955	1,459	0,434

Based on the table above, the experimental group yielded a Cohen's d point estimate of 0.896. Since this value exceeds 0.8, the treatment or teaching method applied to the experimental group demonstrated a high level of effectiveness, resulting in a "Large Effect" on the improvement of student scores. The control group yielded a Cohen's d point estimate of 0.973. As this value is greater than 0.8, the change in scores from pretest to posttest in the control group also falls into the "Large Effect" category. In conclusion, both groups exhibited a large effect size (>0.8). This outcome is plausible if classroom learning conditions in the control group remained effective—even when using conventional methods—or if student familiarity with the material (re-tested during the posttest) played a role.

IV. CONCLUSIONS

Based on the results of the research and discussion regarding audiovisual-based health education and its impact on clean and healthy living behaviors among 42 respondents at SDN 50 Bulu Datu, the following conclusions can be drawn:

1. There is a significant difference in students' knowledge levels regarding Clean and Healthy Living Behavior (PHBS) before and after receiving health education via audiovisual media. Research findings demonstrate that audiovisual media effectively enhances students' understanding and insight into the concepts and importance of PHBS.
2. There is a difference in students' behavior regarding the practice of Clean and Healthy Living Behavior (PHBS) following the provision of health education via audiovisual media. Audiovisual-based health education not only conveys theory but also fosters changes in students' actions and their adoption of clean and healthy living habits in daily life.
3. The use of audiovisual media in health education materials has proven effective in improving the knowledge and PHBS (Clean and Healthy Living Behavior) of elementary school students, as evidenced by the increase in post-test scores.

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