

## THE EFFECT OF EDUCATIONAL VIDEOS ON THE WASTE MANAGEMENT BEHAVIOR OF FIRST-YEAR PUBLIC HEALTH STUDENTS AT PAYUNG NEGERI PEKANBARU INSTITUTE OF HEALTH IN 2025

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### Abstract

*Waste remains a problem in the environment that continues to this day and must be addressed. The habit of littering, not recycling, and the lack of efforts to separate organic and un organic waste are major factors in the increase in waste volume. In addition, uneven environmental education exacerbates this condition, particularly among students. This study aims to determine the effect of educational videos on students' knowledge, attitudes, and behavior in waste management. This is a quantitative study using a quasi-experimental design, which is an experiment conducted on only one group with a one-group pre-test and post-test design measured by a pre-test conducted before the education and a post-test conducted after the education. The research was conducted at the Payung Negeri Pekanbaru Institute of Health with a sample of 40 first-year public health students at Payung Negeri Pekanbaru Institute of Health in 2025. The results of the statistical test using Wilcoxon showed a p-value = 0.000 ( $p < 0.05$ ), which means that there is an effect of providing educational videos on the knowledge, attitudes, and behaviors of waste management among first-year public health students at the Payung Negeri Pekanbaru Institute of Health*

**Keyword:** Waste; Videos ; Education; Student.

### Abstract

Sampah tetap menjadi masalah lingkungan yang berlanjut hingga saat ini dan harus diatasi. Kebiasaan membuang sampah sembarangan, tidak mendaur ulang, dan kurangnya upaya untuk memisahkan sampah organik dan non-organik merupakan faktor utama peningkatan volume sampah. Selain itu, pendidikan lingkungan yang tidak merata memperburuk kondisi ini, khususnya di kalangan siswa. Studi ini bertujuan untuk mengetahui pengaruh video edukasi terhadap pengetahuan, sikap, dan perilaku siswa dalam pengelolaan sampah. Studi ini merupakan studi kuantitatif dengan menggunakan desain kuasi-eksperimental, yaitu eksperimen yang dilakukan hanya pada satu kelompok dengan desain pre-test dan post-test satu kelompok yang diukur dengan pre-test yang dilakukan sebelum pendidikan dan post-test yang dilakukan setelah pendidikan. Penelitian ini dilakukan di Institut Kesehatan Payung Negeri Pekanbaru dengan sampel 40 mahasiswa kesehatan masyarakat tahun pertama di Institut Kesehatan Payung Negeri Pekanbaru pada tahun 2025. Hasil uji statistik menggunakan Wilcoxon menunjukkan nilai  $p = 0,000$  ( $p < 0,05$ ), yang berarti terdapat pengaruh pemberian video edukasi terhadap pengetahuan, sikap, dan perilaku pengelolaan sampah di kalangan mahasiswa kesehatan masyarakat tahun pertama di Institut Kesehatan Payung Negeri Pekanbaru.

Kata kunci: Sampah; Video; Pendidikan; Mahasiswa

## PENDAHULUAN

The environment is indirectly related to all human activities. According to Law No. 23 of 1997 concerning Environmental Management, the environment is a unity of space with all objects, forces, conditions, and living things, including humans and their behavior, which affect the continuity of life and the welfare of humans and other living things. Waste remains a problem in the environment that still occurs today and must be addressed. The increase in the amount of waste is caused by daily activities and the behavior of people who are less concerned about waste, which ultimately leads to environmental pollution. The existence of waste in society has become a classic problem that has not received attention, either from the community or from what is referred to as unwanted material in the form of organic or inorganic materials that are no longer used and have no function in the continuity of life.

Law Number 18 of 2008 states that waste is the end result of human activities or natural processes, whether solid or semi-solid, and in the form of organic or inorganic substances that are no longer used by humans and are discarded into the environment (Undang-Undang Republik Indonesia Nomor 18 Tahun 2008 Tentang Pengelolaan Sampah, 2008). The world's population continues to grow, causing the amount of waste produced to also increase. Unprocessed waste is caused by limited equipment and competence, which ultimately leads to waste accumulation in final disposal sites (Islam et al., 2021). Data from 2018 shows that 62% of waste in Indonesia comes from domestic waste (household waste) (Utami, 2020).

Data from 296 districts/cities throughout Indonesia in 2024 shows that there is a total of 32,033,238.03 tons of waste per year, a reduction of 13.21% or 4,231,472.22 tons per year, waste management of 46.46% or 14,882,515.27 (tons/year), managed waste of 59.67% or 19,113,987.49 (tons/year), and unmanaged waste of 40.33% or 12,919,250.54 (tons/year) (SIPSN, 2025)

Garbage piles in vacant lots can cause foul odors and attract flies, which can then become a factor in digestive diseases. The limited amount of land also makes it difficult to find a suitable location for the construction of a final disposal site (TPA), which can be linked to waste management using the 3R method. The implementation of 3R activities in the community is still hampered, mainly by the lack of public awareness in sorting waste. (Indriani & Santoso, 2021). The habit of littering, not recycling, and the lack of efforts to separate organic and un organic waste are major factors in the increase in waste volume. In addition, uneven environmental education exacerbates this condition, where one component of society is students.

In higher education settings, particularly in health institutions such as the Institute of Health, waste management should be a primary concern. Public health students are expected to be agents of change in promoting clean and healthy living behaviors, including proper waste management. However, in reality, many students still lack awareness and good behavior in sorting, disposing, and managing waste responsibly.

One effective approach to increasing knowledge and shaping behavior is through engaging and accessible educational media,

such as educational videos. Educational videos have the advantage of conveying information visually and audibly, thereby improving understanding and information retention. In addition, this medium is also considered relevant to the characteristics of today's younger generation, who are more familiar with digital technology. Previous studies have shown that audiovisual media such as educational videos are effective in increasing knowledge and influencing public health attitudes and behaviors. Therefore, it is important to examine the extent to which educational videos can influence waste management behaviors, particularly among first-year public health students at Payung Negeri Pekanbaru Institute Of Health, which is the initial stage

of shaping their professional attitudes and behaviors in the field of public health.

## METODE

The type of research in this study is quantitative, using a quasi-experimental design, which is an experimental study conducted on only one group with a one-group pre-test and post-test design measured by a pre-test conducted before education and a post-test conducted after education (Nursalam, 2019). The research location was at the Payung Negeri Pekanbaru Institute of Health, with the research sample consisting of all 40 first-year public health students at Payung Negeri Pekanbaru Institute of Health in 2025.

## HASIL

### A. Univariate Analysis

**Table 1. Respondent Characteristics**

No	Characteristic	frequency (n)	Percentage (%)
<b>1</b>	<b>Class</b>		
	A	20	50,0
	B	20	50,0
<b>Total</b>		<b>40</b>	<b>100</b>
<b>2</b>	<b>Gender</b>		
	Laki-Laki	6	15,0
	Perempuan	34	85,0
<b>Total</b>		<b>40</b>	<b>100</b>

*Source : Primer Data 2025*

Based on the table 1 above, it is known that of the 40 first-year public health students at Payung Negeri Pekanbaru Institute of Health, 20 of them are in class

1A and the other 20 are in class 1B, with a percentage of 50.0% each, where the majority are female, namely 34 students (85.0%).

**Table 2. Average Knowledge Scores Before and After Educational Videos on Waste Management Were Shown to First-Year Public Health Students at Payung Negeri Pekanbaru Institute of Health.**

No	Knowledge of Waste Management	n	Mean	Median	Min-Max	SD
1	Pre test	40	80,25	80,0	70-90	6,197
2	Post test	40	100,0	100,0	100-100	0,000

*Source : Primer Data 2025*

Based on Table 2 above, the average knowledge score of students before being shown the educational video on waste management was 80.25, with a median of

80.0. Meanwhile, after being shown the educational video on waste management, the mean score was 100.0, with a median of 100.0.

**Table 3. Average Attitude Scores of Students Before and After Being Given Educational Videos on Waste Management to First-Year Public Health Students at Payung Negeri Pekanbaru Institute of Health**

No	Attitude of Waste Management	n	Mean	Median	Min-Max	SD
1	Pre test	40	31,40	33,0	15-35	4.325
2	Post test	40	34,35	34,0	31-36	1.916

*Source : Primer Data 2025*

Based on Table 3 above, the average score of students' attitudes before being shown the educational video on waste management was 31.40, with a median of

33.0. Meanwhile, after being shown the educational video on waste management, the mean score was 34.35, with a median of 34.0.

**Table 4. Average Behavior Scores of Students Before and After Being Given Educational Videos on Waste Management to First-Year Public Health Students at Payung Negeri Pekanbaru Institute of Health**

No	Behavior of Waste Management	n	Mean	Median	Min-Max	SD
1	Pre test	40	63,0	60,0	60-70	4.641
2	Post test	40	90,0	90,0	90-90	0,000

*Source : Primer Data 2025*

Based on Table 4 above, the average score for student behavior before being shown the educational video on waste management was 63.0, with a median of

60.0. Meanwhile, after being shown the educational video on waste management, the mean score was 90.0, with a median of 90.0.

**B. Bivariat Analysis****Table 5. The Effect of Educational Videos on Waste Management Knowledge Among First-Year Public Health Students at Payung Negeri Pekanbaru Institute of Health**

Variabel	n	Mean	SD	Mean Rank	P-Value
Knowledge prior to being given educational videos (pre test)	40	80,25	6,197	0,00	0,000
Knowledge after being given educational videos (post test)	40	100,0	0,000	20,50	
Knowledge prior < Knowledge after being given educational videos	0				
Knowledge prior > Knowledge after being given educational videos	40				
Knowledge prior = Knowledge after being given educational videos	0				

*Source : Primer Data 2025*

Based on table 5 above, the results of the Wilcoxon statistical test showed a p-value = 0.000 ( $p < 0.05$ ), which means that there was an effect of educational videos on

the knowledge of waste management among first-year public health students at Payung Negeri Pekanbaru Institute of Health.

**Table 6. The Effect of Educational Videos on Waste Management Attitude Among First-Year Public Health Students at Payung Negeri Pekanbaru Institute of Health**

Variabel	n	Mean	SD	Mean Rank	P-Value
Attitude prior to being given educational videos (pre test)	40	31,40	4.325	15,50	0,000
Attitude after being given educational videos (post test)	40	34,35	1.916	21,75	
Attitude prior < Attitude after being given educational videos	8				
Attitude prior > Attitude after being given educational videos	32				
Attitude prior = Attitude after being given educational videos	0				

*Source : Primer Data 2025*

Based on table 6 above, the results of the Wilcoxon statistical test showed a p-value = 0.000 ( $p < 0.05$ ), which means that there was an effect of educational videos on

the waste management attitudes of first-year public health students at Payung Negeri Pekanbaru Institute of Health.

**Table 7. The Effect of Educational Videos on Waste Management Behavior Among First-Year Public Health Students at Payung Negeri Pekanbaru Institute of Health**

Variabel	n	Mean	SD	Mean Rank	P-Value
Behavior prior to being given educational videos (pre test)	40	63,0	4.641	0.00	0,000
Behavior after being given educational videos (post test)	40	90,0	0,000	20,50	
Behavior prior < Behavior after being given educational videos	0				
Behavior prior > Behavior after being given educational videos	40				
Behavior prior = Behavior after being given educational videos	0				

Source : Primer Data 2025

Based on table 7 above, the results of the Wilcoxon statistical test showed a p-value = 0.000 ( $p < 0.05$ ), which means that there was an effect of educational videos on

**PEMBAHASAN**

Based on table 5 above, it is known that there was an increase in the mean knowledge score of 40 students after being given educational videos. In the pre-test, the mean score was 80.25, and in the post-test, it was 100.0. the results of the Wilcoxon statistical test showed a p-value = 0.000 ( $p < 0.05$ ), which means that there was an effect of educational videos on the knowledge of waste management among first-year public health students at Payung Negeri Pekanbaru Institute of Health. The results of this study are in line with the research conducted by Anggraini et al., (2024) entitled “The Effectiveness of Video and Leaflet Educational Media on Knowledge and Attitudes About Waste Management at State Senior High School 11 in Bengkulu City.” The results obtained using the Wilcoxon test show that there was a significant increase in knowledge before and after the video media treatment was given, with a P-value of  $0.030 < (0.05)$ . The

the waste management behavior of first-year public health students at Payung Negeri Pekanbaru Institute of Health.

results of this study are also in line with the research conducted by Fadilah et al., (2024) entitled “The Effect of Educational Video Media on Knowledge and Attitudes Towards Waste Disposal Among Students at UPTD SDN 1 Singaraja”, which obtained Wilcoxon test results with a P-value =  $0.001 < 0.005$ . These results prove that there is a significant effect of educational video media on students' knowledge of how to dispose of waste, as evidenced by an increase in knowledge scores after the treatment.

Based on table 6 above, it is known that there was an increase in the mean attitude score of 32 students after being shown the educational video. In the pre-test, the mean score was 31.40, and in the post-test, it was 34.35, which means that there was a significant increase in the average attitude before and after being shown the educational video. the results of the Wilcoxon statistical test showed a p-value = 0.000 ( $p < 0.05$ ), which means that there was

an effect of educational videos on the waste management attitudes of first-year public health students at Payung Negeri Pekanbaru Institute of Health. The results of this study are in line with research conducted by Anggraini et al. (2024) entitled “The Effectiveness of Video and Leaflet Educational Media on Knowledge and Attitudes About Waste Management at State Senior High School 11 in Bengkulu City.” The results obtained using the Wilcoxon test showed that there was a significant increase in attitude before and after the video media treatment was given, with a P-value of  $0.001 < (0.05)$ . The results of this study are also in line with the research conducted by Fadilah et al. (2024) entitled “The Effect of Educational Video Media on Knowledge and Attitudes Towards Waste Disposal Among Students at UPTD SDN 1 Singaraja”, which obtained Wilcoxon test results with a P-value =  $0.002 < 0.005$ . These results prove that there is an effect between the treatment given in the form of educational video media and attitudes towards waste disposal, as evidenced by an increase in the scores of respondents after the treatment was given.

Based on table 7 above, it is known that there was an increase in the mean behavior score of 40 students after being given educational videos. In the pre-test, the mean score was 63,0, and in the post-test, it was 90,0. The results of the Wilcoxon statistical test showed a p-value = 0.000 ( $p < 0.05$ ), which means that there was an effect of educational videos on the waste management behavior of first-year public health students at Payung Negeri Pekanbaru Institute of Health. The results of this study are in line with research conducted by (Seprina et al., 2025) entitled “Education on the Prevention of Littering from an Early

Age Through Animated Videos at SD N 024 Tarai Bangun.” Using the Wilcoxon test, it was found that the significance level of the score was 0.007. which indicates that there was a significant difference in the test scores before and after the material was presented.

The results of this study are also in line with the research conducted by Nurhayati et al. (2020) entitled “Differences in Community Behavior Regarding Household Waste Management Towards Counseling,” where the statistical test results obtained a P-value =  $0.0005 < 0.05$ , meaning that  $H_0$  was rejected. It can be concluded that there is a significant effect on actions before and after the implementation of counseling using audio-visual media.

## **SIMPULAN**

Based on research and discussions conducted at Payung Negeri Pekanbaru Institute of Health related to “The Effect of Educational Videos on Waste Management Behavior Among First-Year Public Health Students at Payung Negeri Pekanbaru Payung Negeri Institute of Health 2025,” it can be concluded that there is an effect of educational videos on the knowledge, attitudes, and behavior of first-year public health students at Payung Negeri Pekanbaru Institute of Health.

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