

## The Effect of Using Video Tutorial Learning Media on Students' Learning Outcomes in Physical Education Subjects of Football for Class VIII SMP Angkasa Lanud Padang

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### Abstract

*This research was carried out with the aim of describing whether there was an effect of the use of video tutorial learning media on student learning outcomes in the physical education subject of football for class VIII SMP Angkasa Lanud Padang. The method in this research uses a quantitative approach using pre-experimental methods. Data collection techniques use test and documentation techniques. And the data analysis techniques used in this research are validity test, reliability test, mean, standard deviation, variance, normality test, homogeneity test, and hypothesis test. The conclusion of this research is that based on data analysis and discussion of research results, it can be found that student learning outcomes when given treatment are higher than learning outcomes before being given treatment. So, the use of video tutorial media in the learning process has a significant effect on the learning outcomes of students in physical education subjects of football for class VIII SMP Angkasa Lanud Padang.*

### Abstrak

Penelitian ini dilaksanakan dengan tujuan untuk mendeskripsikan apakah ada pengaruh penggunaan media pembelajaran video tutorial terhadap hasil belajar siswa pada mata Pelajaran penjasokes materi sepak bola siswa kelas VIII SMP Angkasa Lanud Padang. Metode pada penelitian ini menggunakan pendekatan kuantitatif dengan menggunakan metode pre-eksperimental. Teknik pengumpulan data menggunakan Teknik tes dan dokumentasi. Dan Teknik analisis data yang digunakan pada penelitian ini adalah uji validitas, uji reliabilitas, mean, standar deviasi, varians, uji normalitas, uji homogenitas, dan uji hipotesis. Simpulan dari penelitian ini adalah Berdasarkan analisis data dan pembahasan hasil penelitian maka dapat dikemukakan bahwa hasil belajar siswa ketika diberikan perlakuan lebih tinggi dibandingkan dengan hasil belajar sebelum diberikan perlakuan. Jadi, penggunaan media video tutorial pada proses pembelajaran memberikan pengaruh yang signifikan terhadap hasil belajar siswa mata Pelajaran penjasokes paada materi sepak bola kelas VIII SMP Angkasa Lanud Padang.

**Keywords:** Pengaruh, Video tutorial, Hasil Belajar, Penjasokes

### INTRODUCTION

In the current digital era, the use of video tutorial media has become a popular trend in education. Video tutorial media can provide better visualization, structured steps, and repetition of material that allows students to learn and understand the concepts being taught better. In the context of physical education, the use of video tutorial media can be an effective alternative in helping students understand and master the material.

In addition, technological developments and easy access to video tutorial media have affect the way students obtain information and learn. Students often rely on video tutorials as their primary source for learning new concepts. Therefore, it is important to examine whether the use of video tutorial media effectively increases students' understanding or whether there are other factors that need to be considered in

optimizing the use of this media in the learning context.

Learning is a system that aims to help students' learning process. Learning is in the form of a series of events that are designed, structured in such a way as to influence and support the internal learning process of students. Situations or conditions in learning that allow the learning process to occur must be designed and considered first by the designer (Tritjahjo Danny S, 2015: 19).

Based on observations made at SMP Angkasa Lanud Padang in class VIII in 2022, in the learning process the teacher did not use learning media. The teacher did not use learning media that could reach students' learning styles. Teachers still use conventional media such as printed books and worksheets for learning. The teacher explains the theory directly to students based on the material in printed books and worksheets, and the teacher

also practices the theory in the field. This also affects student learning outcomes.

By using this video tutorial, the teacher does not have to explain the learning material repeatedly. If you display media in the form of video. The effect of the use of video tutorial learning media on student learning outcomes in football material in physical education subjects in class VIII SMP Angkasa Lanud Padang needs to be studied further. Although video tutorial media has the potential to improve students' understanding, it still needs to be researched.

## RESEARCH METHOD

Based on the problems and research objectives that have been stated, this type of approach is quantitative. Quantitative research can be interpreted as a research method based on the philosophy of positivism, used to research certain populations or samples, collecting data using research instruments, quantitative or statistical data analysis, with the aim of testing predetermined hypotheses (Sugiyono, 2017).

The research method used is pre-experimental research. Pre-experimental methods are research designs that are not yet categorized as real experiments. This is because in this design random sampling has not been carried out and sufficient control has not been carried out on disturbing variables that could affect the dependent variable.

This research uses pre-experimental research. The implementation involves or uses one class, namely class VIII SMP Angkasa Lanud Padang.

### Data collection technique

#### 1. Test

The cognitive aspect learning outcomes test will be measured using pretest and posttest. A pretest will be given before the treatment is implemented, which aims to determine and measure students' initial abilities in the physical education subject matter of football.

#### 2. Documentation

Documentation is looking for data about things observed through inanimate objects. Documentation in this research is

in the form of photographs captured during research activities.

### Data analysis technique

In this research, data analysis was used to see differences in student learning outcomes, by conducting a pre-test and post-test. In this research, the data analysis used was quantitative data analysis with normality tests and homogeneity tests. Before carrying out the test, validity and reliability tests are first carried out as well as statistical calculations which include average, standard deviation and variance.

#### • Validity test

To test the validity of the test, the following formula is used:

$$rpbi = \frac{Mp - Mt}{SDt} \sqrt{\frac{p}{q}}$$

Information:

Rpbi = serial point correlation coefficient

Mp = Mean score of the subjects who answered correctly and the correlation between the tests

Mt = Mean total score (average score of all test takers)

SDt = Standard Deviation of total score

P = Proportion of subjects who answered the item correctly

q = 1 - p

where to look:

P

$$= \frac{\text{Jumlahbanyaksiswayangmenjawabbenar}}{\text{Jumlahseturuhsiswa}}$$

Mt =  $\frac{\sum Xt}{N}$

SDt =  $\sqrt{\frac{\sum Xt^2}{N} - \left(\frac{\sum Xt}{N}\right)^2}$

#### • Test the reliability of the test

To test the reliability of the test, the Cronbach Alpha formula is used with the following formula:  $r11 = \left(\frac{n}{n-1}\right) \left(1 - \frac{\sum Si^2}{St^2}\right)$

Information:

r11 = test reliability coefficient

N = the number of questions issued in the test

1 = constant number

$\sum Si^2$  = total score variance for each item

$S^2$  = total variance

Where:

$$S^2 = \frac{\sum x^2 - \frac{(\sum x)^2}{N}}{N}$$

Furthermore, when interpreting the reliability coefficient ( $r_{11}$ ), the following benchmarks are generally used:

1.  $0.90 < r_{11} < 1.00$  very high reliability
2.  $0.70 < r_{11} < 0.90$  high reliability
3.  $0.40 < r_{11} < 0.70$  sufficient reliability
4.  $0.20 < r_{11} < 0.40$  low reliability
5.  $r_{11} < 0.20$  very low reliability

If the price  $r_{11} > r_{table}$ , then the items in the instrument are reliable, conversely if  $r_{11} < r_{table}$  then the items in the instrument are not reliable.

#### • Average (Mean)

According to Sudjana, to determine the qualifications of learning outcomes achieved by students can be known through the average which is formulated as:

$$\bar{X} = \frac{\sum Xi}{n}$$

Information:

- $\bar{X}$  : Average value (*mean*)  
 $\sum Xi$  : The total of all data  
 $n$  : Lots of data

#### • Standard deviation

The standard deviation or sample standard deviation is used in calculating the  $z_i$  value in the normality test. Sample standard deviation formula according to Sugiyono:

$$S = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n - 1}}$$

Information:

- $s$  : sample standard deviation  
 $\bar{x}$  : average value (*mean*)  
 $n$  : lots of data  
 $x_i$  : data to- $i$  where  $i = 1, 2, 3, \dots, n$

#### • Variance

Sample variance is used in calculating homogeneity tests and  $t$

tests. According to Sugiyono, to calculate the sample standard deviation, the formula is used:

$$s^2 = \frac{\sum (x_i - \bar{x})^2}{n - 1}$$

Information:

- $s^2$  : sample variance

#### • Data normality test

The normality test is carried out to determine whether the data distribution follows the normal standard distribution. According to (Sugiyono, 2012:228) the use of parametric statistics requires that the data for each variable to be analyzed must be normally distributed. Therefore, before hypothesis testing is carried out, it is necessary to test the normality of the data first. The data obtained from this research is the value of learning/practicum results in the Physical Education class VIII subject after the material has been mastered and understood. In this research, the Liliefors test was used.

The steps to calculate the Liliefors test are as follows:

- a. Sort values  $x_i$  sorted from smallest value to largest value
- b. Observation  $x_1, \dots, x_n$  is used as a standard number  $z_1, z_2, z_3, \dots, z_n$  with the formula:

$$z_i = \frac{x_i - \bar{x}}{s}$$

Information:

- $X$  : the data sought  
 $\bar{X}$  : the average value of the sample  
 $S$  : standard deviation

- c. From each standard value, the critical value  $z$  ( $z_{table}$ ) can be found using the standard normal distribution list, then the probability is calculated with negative conditions, then  $F(z_i) = P(z \geq z_i)$ , whereas if it is positive, then  $F(z_i) = P(z \geq z_i)$   
 $F(z_i) = 0,5 - z_{table}$   
 $F(z_i) = 0,5 + z_{table}$
- d. Next, calculate the proportion of  $\dots$ , which is smaller or equal to  $\dots$ . If this proportion is expressed by  $\dots$ , then  $z_1, z_2, z_3, \dots, z_n$

$$S(z_i) = \frac{\text{banyaknya } z_1 z_2 z_3, \dots, z_n \text{ yang } \leq z_i}{n}$$

- e. Calculate the difference then determine the absolute price.  $F(z_i) - S(z_i)$
- f. Take the largest price among the absolute prices of the difference, this price is referred to as  $L_{hitung}$

When making a decision, compare it using the Liliefors test critical value table with the real level. If then the sample is distributed  $L_{hitung} \leq L_{tabel}$  normal, and if  $5\% L_{hitung} \leq L_{tabel}$  normal, and if then the sample is not normally distributed.  $L_{hitung} > L_{tabel}$

• **Homogeneity test**

The homogeneity test is a test of whether or not the variances of two or more distributions are the same. This test aims to find out whether the sample group has homogeneous variants or not. In this study, researchers chose to use the homogeneity of variance test.

Steps to calculate the homogeneity test:

- a. Find the variance/standard deviation of variables x and y, with the formula:

$$Sx^2 = \sqrt{\frac{n(\sum x^2 - (\sum x)^2)}{n(n-1)}}$$

$$Sy^2 = \sqrt{\frac{n(\sum y^2 - (\sum y)^2)}{n(n-1)}}$$

- b. Find the calculated F with the variance of x and y, with the formula:

$$F = \frac{S_{besar}}{S_{kecil}}$$

Numerator: Big S means the variance of the group with variance biggest (more)

Denominator : Small S means the variance of the group with variance smallest (fewer)

• **Hypothesis testing**

After carrying out the normality test and homogeneity test, the hypothesis test is then carried out using a comparison test (t test), namely a comparison test of two samples which is used to compare (differentiate) whether the two data (variables) are the same or different.

The t test formula (t-test) is as follows:

$$t' = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Information:

t : the difference between 2variable

n1 : number of first data (variables I)

n2 : number of second data (variables II)

$\bar{x}_1$  : the calculated average value of the first data

$\bar{x}_2$  : the calculated average value of the second data

$S_1^2$  : variance of the first data

$S_2^2$  : second data variance.

**RESEARCH RESULTS AND DISCUSSION**

This research was carried out at SMP Angkasa Lanud Padang on class VIII students in the 2023/2024 academic year. This research is focused on finding out the effect of using video tutorial learning media on student learning outcomes in the physical and physical education subject matter.

1. **Test the validity and reliability of the pre test**

Before using the test as research, first test the validity of the test. The number of tests that tested the validity of a question consisting of 20 questions on 22 students. To find the validity of the test, the rpbi formula is used, an item is declared valid if  $r_{count} > r_{table}$  at the sigma significance level = 0.05 or 5%. And the rtable here is 0.423.

After calculating in the same way for each question, there are 14 valid questions, namely questions number 1, 2, 3, 4, 5, 6, 7, 8, 11, 15, 17, 18, 19, 20, and there are 6 questions. The invalid ones are questions number 9,10,12,13,14,16.

After calculating the validity of the test for the pre-test questions, calculations were then carried out to find the reliability of the pre-test with Cronbach alpha. Reliability testing is declared reliable if the alpha of the test results is  $> r_{table}$  with a

significance of 5%. Here the  $r_{table}$  is 0.423.

The results of the reliability test obtained a reliability coefficient of  $0.710 > 0.423$  and was at a very high reliability level.

**2. Test the validity and reliability of the posttest**

Similar to the pre-test, the post-test questions also use tests as research. The number of tests tested for validity consisted of 20 questions on 22 students. To find the validity of the test, the  $r_{pbi}$  formula is used, the test item is declared valid if  $r_{count} > r_{table}$  at a significance level = 0.05 or 5%. Where  $r_{table}$  is 0.423. After calculating each item in the same way, 18 valid questions were obtained, namely questions

number 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18,19,20, and 2 invalid questions, namely questions number 1 and 15.

After carrying out the validity of the test for the post test questions, calculations are then carried out to find the reliability of the posttest using the Cronbach alpha formula. This reliability test is declared reliable if the alpha of the test results is greater than  $r_{table}$  with a significance level of 5%. Where  $r_{table}$  is the results of the reliability test obtained a coefficient of  $0.832 > 0.423$  and was at the high reliability level.

**Pre-test**

The pre-test results in this research can be seen in the table below

**Table1. Pretest results**

Intervals	Midpoint	Frequency	%
05-07	6	5	22.73
08-10	9	5	22.73
11-13	12	4	18.18
14-16	15	8	36.36
		22	100.00

**Table2. Posttest Results**

Intervals	Midpoint	Frequency	%
09-11	10	2	9.09
12-14	13	3	13.64
15-17	16	4	18.18
18-20	19	13	59.09
		22	100.00

**Data analysis**

As a general illustration, regarding the distribution of research data obtained in the field, the existing data is described in the form of data that has been processed from raw data that has been obtained using the following form of analysis.

**3. Normality test**

**Table3. Posttest Results**

1. Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
pretest	0.147	22	,200*	0.895	22	0.024
posttest	0.257	22	0.001	0.804	22	0.001

In the output-test of normality it can be seen that the sig. (p value) from Kolmogorov Smirnov and Shapiro Wilk  $< 0.05$  which means  $H_0$  is rejected ( $H_a$  is accepted) meaning the

data is not normally distributed. So, hypothesis testing (average difference) uses a pair of paired sample t-tests, namely the Wilcoxon signed rank test.

Test the Wilcoxon signed rank test, from the main SPSS menu select the analyze nonparametric test legacy dialogs-2 deleted samples move the pretest and posttest levels to paired variables, activate Wilcoxon in the test type ok. The test results can be seen in the table below

**Table4.Normality test results**

Ranks		N	Mean Rank	Sum of Ranks
posttest pretest	Negative Ranks	2a	6.25	12.50
	Positive Ranks	20b	12.03	240.50
	Ties	0c		
	Total	22		

The mean positive rank (increase in score from pretest to posttest) is 12.03 while the mean negative rank (decrease in score from posttest to pretest) is 0.00, the table shows that all subjects (N=22) are in the positive rank, meaning that the post test scores for all subjects are higher than the pre test scores.

**Table5.Normality test results**

Test Statistics		
	posttest pretest	-
Z		-3.707b
Asymp. Sig. (2-tailed)		0,000
a. Wilcoxon Signed Ranks Test		
b. Based on negative ranks.		

The table shows that the data significance level is 0.000 (p value <0.005) so that H0 is rejected or the two population averages are not identical (the average pre-test and post-test scores are significantly different). So, it can be concluded that the use of video tutorials can influence student learning outcomes.

#### 4. Homogeneity Test

The homogeneity test is used to show that the data is homogeneous data. as a testing criterion, if the significant value is > 0.05 then it can be said that the variance of two or more groups of data is the same. The calculation results are as follows

$$\begin{aligned} \text{Pretest variant} &= 140.636 \\ \text{Posttest variant} &= 310,487 \\ N &= 22 \end{aligned}$$

$$F = \frac{\text{Distributed Variance } 310.487}{\text{Smallest variance } = 140.636} = 2.2077$$

Thus dk = n-2 then 22-2= 20, the price of ftable is obtained from ftable with a real significant level of 0.05, namely 2.214  
 If the value of fcount is compared with ftable (2.2077 < 2.214) it can be concluded that the pretest and post test data tested for class VIII SMP Angkasa Lanud Padang are homogeneous

#### 5. Hypothesis testing

The test of differences in data from the pre-test and post-test results of the experimental group was intended to find out whether the use of video tutorial media had an impact on student learning outcomes in the physical education

subjects of football for class VIII SMP Angkasa Lanud Padang.

In this research, it is known that the value of  $t_{count}$  is 5.147 and  $t_{table}$  is 2.018, so the degree of freedom is  $t = n-1$  (22-1) with a significance level of 0.05, so  $t_{count} > t_{table}$ , namely  $5.147 > 2.018$ . So it can be concluded that the accepted hypothesis is  $H_0$ , there is an effect of the use of video tutorial media on the learning outcomes of class VIII students at SMP Angkasa Lanud Padang.

## CONCLUSION

Based on data analysis and discussion of research results, it can be found that student learning outcomes when given treatment are higher than learning outcomes before being given treatment. So, the use of video tutorial media in the learning process has a significant effect on student learning outcomes in physical education subjects of football for class VIII SMP Angkasa Lanud Padang.

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