

# Application Of Multimedia On 50 M Freestyle Swimming Course For Students Of Sport Education FIK Universitas Negeri Padang

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## Abstract:

Multimedia is a more complex learning media, and a means of delivering messages in two or more forms. This study aims to determine the effect of 50 M freestyle swimming course using multimedia on the learning outcomes of student majoring in sports education at FIK UNP. The method used is quasi experiment. The sampling technique is done by using a random sample quota technique. The sample size for each treatment group is 10 people, so the number of samples is 20 people or 50% of the total population. The results of the data normality test calculation used the *Kolmogorov Smirnov* test at a significance level of 0.05, showing a significance value > 0.05, so that all sample groups in this study came from normally distributed populations. From the hypothesis test using the t test,  $t_{count} > t_{table}$  or significance  $\leq \alpha$  value (0.05) was produced. The conclusion of the study was the 50 M freestyle swimming course using multimedia significantly affected the learning outcomes of FIK UNP's Sport Education students.

**Keywords — multimedia learning, freestyle swimming**

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## I. INTRODUCTION

Education is one component that has a very important role in the formation and development of the quality of human resources. Through education it is expected to be able to prepare quality human resources and be able to compete in the current era of globalization. Through education, it is expected that all one's potential can grow and develop optimally. The development of innovation in the learning paradigm is very fast, due to the influence of rapid technological progress.

Education in the globalization era (21st century) must be able to build a knowledgeable society (knowledge-based society) and have literacy skills in Information and Communication Technology (ICT), media (ICT and literacy skills), as well as critical thinking skills, problem-solving skills, effective communication skills, and collaborative skills [1].

As one of the formal education institutions that produces physical and health education teachers, the Faculty of Sport Science, Padang State

University (FIK UNP) continues to improve the quality of lecturers and graduates who are expected to become professional teachers in their fields. Physical and health education teachers must be able to teach and demonstrate the elements of the movement technically during the learning process, so it is expected that professionals will truly carry out their duties as educators and sports coaches in schools and in the community.

Sport, Health and Physical Education in Primary Schools have a significant role in developing students' physical abilities and social skills, which directly or indirectly have a positive effect on efforts to increase Indonesia's human resources who are healthy, strong, skilled, unyielding, hard working and have the ability to adapt to various future changes [2]. According to Subroto [3] physical education is a medium to encourage the development of motor skills, physical abilities, knowledge and reasoning, and appreciation of values (attitude, mental, emotional, spiritual, and social). In addition, physical education can become

a habit of healthy living patterns to stimulate balanced individual growth and development.

As an institution, the Faculty of Sport Science (FIK) UNP aims to produce professional physical education teachers at primary and secondary education levels. Besides that, the aim of FIK (UNP) is to produce reliable and professional trainers and instructors in various sports. To achieve these objectives, during their education students obtain various theoretical and practical courses, including aquatic learning. Aquatic learning courses are compulsory subjects with a weight of 2 credits, which discusses the understanding and mastery of motion about aquatics and rules in swimming and the ability to teach in learning in small groups [4].

Based on the observations, at the beginning of swimming classes only 5 to 10 out of 40 students can swim but have not been able to swim with the correct technique. The inability to swim can be caused by anxiety, gross motor disturbances, or has a low level of motor ability, so that it is difficult to master the swimming technique given by the teacher.

To increase student motivation in swimming course, there must be a new breakthrough in the implementation of learning. Utilizing multimedia that has been growing rapidly at this time is one alternative so that the learning process is more interesting and right on target. Mayer [5] states multimedia is a more complex learning media, and a means of delivering messages in two or more forms, such as using text and images. Material is presented in oral form (such as using printed text or spoken text), and with images (such as using static graphics, including illustrations, graphics, maps or photos) or using dynamic graphics including animation or video.

In order to support the learning process of freestyle swimming at FIK UNP, the use of multimedia that is already available in the market is an option. This multimedia is used in an effort to improve the mastery of freestyle swimming techniques, and help procure learning media that are more interesting, easy to reproduce and operate. This study reports on the learning outcomes of student freestyle swimming after learning using multimedia.

## II. METHODS

The method used is quasi experiment. This research was conducted by dividing the study groups into two groups, namely groups of students who use multimedia in the 50 M freestyle swimming course (experimental group) and groups that do not use multimedia (control groups). The study was conducted on students majoring in Sport Education FIK UNP who were male and took basic swimming courses. The population is 40 people.

The research design is described as follows:

RE : X O <sub>1</sub>
RK : Y O <sub>2</sub>

- RE = Experimental group
- RK = Control group (conventional learning)
- X = The treatment for the experimental class is in the form of multimedia
- Y = Treatment for the control class
- O<sub>1</sub> = Posttest for experimental group
- O<sub>2</sub> = Posttest for control group

The sampling technique is done by using a random sample quota technique. The sample size for each treatment group is 10 people, so the number of samples is 20 people or 50% of the total population. For group division, an ordinal matching paired is performed. Trial people who have been selected are divided into 2 groups. Meanwhile, to determine the experimental and control groups performed by lottery. Each group consists of 10 people.

Before the research was carried out, first a freestyle swimming technique pretest was conducted on students, then ranked. Distribution of samples in the treatment group by ordinal pairing. The treatment was given to the experimental and control groups twice a week, and carried out for six weeks. The 1<sup>st</sup> posttest was conducted after the treatment proceeded for three weeks or six meetings. The 2<sup>nd</sup> posttest was conducted after six weeks of treatment.

The control group (using conventional learning) was given working papers and pictures describing

freestyle swimming techniques that they had to do at each meeting. While the experimental group was given multimedia in the form of a compact disc containing a video description of freestyle swimming techniques.

The data analysis technique was performed by using descriptive data analysis test, prerequisite analysis test, and research hypothesis analysis test. Descriptive data analysis in the form of calculating the mean, median, mode, and standard deviation and variance. Prerequisite analysis is done using the normality test. Hypothesis testing of research conducted using tests for two groups of data from two groups of samples. The collected data is processed using inferential statistics, analyzed by computerized t-test using SPSS.

### III. RESULTS

#### Study results

##### A. Data Description

###### 1) Initial data (pretest)

From the results of the initial test (pretest) conducted on the sample selected as the experimental class, the mean of freestyle swimming course was 22.5; the median was 21.0; the mode was 20,0; the standard deviation was 7,276; and the variance was 52,944. While the results of the initial test (pretest) conducted on the sample chosen as the control class, the mean of freestyle swimming learning outcomes was 22.2; the median was 21.0; the mode was 20,0; the standard deviation was 5,977; and the variance was 35,733 (Table 1.).

TABLE I  
SUMMARY OF DESCRIPTIVE STATISTICS CALCULATION RESULTS

Statistic Data	Experimental Group	Control Group
n	10	10
Mean	22,5	22,2
Median	21,0	21,0
Mode	20,0	20,0
Standard deviation	7,276	5,977
Variance	52,944	35,733

Source: Processed primary data

###### 2) Final test data (Post test)

From the results of the final test (posttest) conducted on the sample chosen as the experimental class, the mean of the learning outcomes of freestyle swimming was 75.00; the median was 75,00; the mode was 75.00; the standard deviation was 3.23; and the variance was 12.44.

From the results of the final test (posttest) conducted on samples selected for the 50 M freestyle swimming group using multimedia, it is obtained the learning outcomes scores. From 10 samples of 50 M freestyle swimming group with multimedia media, 1 person (10%) has a score between 70-71; 3 people (30%) have a score between 72 - 73; 3 people (30%) have a score between 74 - 75; 1 person (10%) has a score between 76 - 77; 0 people (0%) did not have a score between 78 - 79; and 2 people (20%) have scores between 80-81. From the results of the study it can be concluded that the score of the 50 M freestyle swimming learning outcomes using multimedia there are 6 people (60%) in above average and 4 people (40%) in below average. For details, see Figure 1.

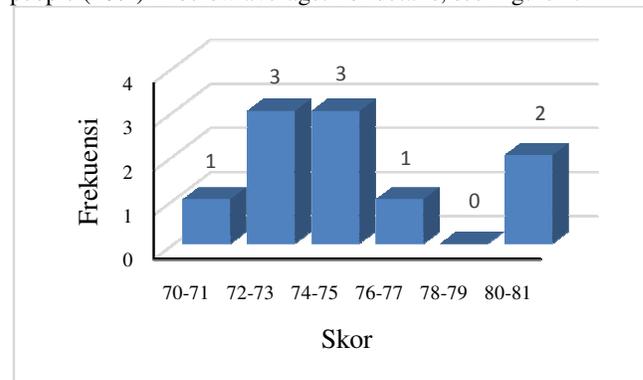


Fig 1. Posttest data on the 50 M freestyle swimming learning outcomes of groups of students who use multimedia

##### B. Requirement Analysis Testing

T Prior to testing the hypothesis, the requirement testing which is normality test is conducted. The purpose of normality testing is to test whether the data is normally distributed or not. The data normality test used the *Kolmogorov Smirnov* test at a significance level of 0.05. A summary of the data normality test can be seen in Table 2.

$H_0$  : the data comes from populations that are normally distributed if significance > 0.05

$H_1$  : the data comes from populations that are not normally distributed if sig < 0.05

TABLE III  
SUMMARY OF CALCULATION RESULTS FOR DATA NORMALITY TEST

Data Group	Number of Samples	Kolmogorov Smirnov	Sig.	Conclusion
Experimental	10	0,05	0,927	Data is normally distributed
Control	10	0,05	0,819	Data is normally distributed

Source: Processed primary data

Based on Table 2. the significance value is  $> 0.05$ , so that all sample groups in this study come from normally distributed populations.

**C. Research Hypothesis Testing**

Data analysis to test the hypothesis in this study used the t test, with the research hypothesis as follows:

$H_0$  : Application of multimedia has no significant effect on the learning outcomes of the 50M freestyle swimming students of the Department of Sport Education FIK UNP.

$H_1$  : Application of multimedia has a significant effect on the learning outcomes of 50M freestyle swimming students of the Department of Sport Education FIK UNP.

The hypothesis testing criteria is  $H_0$  is accepted if  $t_{count} < t_{table}$  or significance  $> \alpha$  value (0.05), and  $H_1$  is accepted if  $t_{count} > t_{table}$  or significance  $\leq \alpha$  value (0.05).

Based on the results of statistical analysis using the t test it is obtained  $t_{count} = 5.887$ , and  $t_{table} = 2.262$ . While the significance value is 0.00. So it can be seen that  $t_{count} > t_{table}$  (Table 3.). Therefore in this study  $H_1$  was accepted. So it can be concluded 50 M freestyle swimming course using multimedia has a significant effect on student learning outcomes at the Department of Sport Education FIK UNP. From the data obtained, it can be seen that the 50 M freestyle swimming learning outcomes of students who use multimedia are higher than conventional learning (control).

TABLE IIIII  
 SUMMARY OF AVERAGE DIFFERENCE TEST RESULTS

Data group	Number of samples	Mean	$t_{count}$	$t_{table}$	Conclusion
Experimental	10	75.00	5,887	2.262	The average value of the experimental group was higher than the control group
Control	10	63,00			

Source: Processed primary data

**IV. DISCUSSION**

As one of the learning media, multimedia is a more complex learning media by combining several media. According to Surjono [6] multimedia can be an intermediary to deliver messages or information in the form of text, images, sound or video. Multimedia is a combination of several media used to convey messages or information in an integrated and synergistic manner through computers or other electronic equipment.

The average value of the pretest swimming freestyle students before given the learning for the experimental group was 22.5 while the control class was 22.2. After learning, posttest was conducted, and the highest average score was the experimental group, which was 75.00. Whereas the control group had an average score of 63.00. Based on the results of the t-test of this study, it was seen  $t_{count} > t_{table}$ , so it was concluded that the 50 M freestyle swimming course using multimedia significantly affected the learning outcomes of the students of the Department of Sport Education FIK UNP.

The role of multimedia in the learning process is very useful, because multimedia can combine different media, in this research is in the form of video, sound and text. Multimedia is very useful and effective in learning, motivating students' curiosity, rather than students with conventional learning. Sakat et al., [7] states the use of multimedia that is interesting, providing fun and enjoyment for students in the learning process. Students tend to learn more about new topics in the learning process. The use of instructional media technology can provide a different experience than conventional learning.

Most believe that there is a revolution in education, which is about the learning process. The use of the internet, multimedia, and mobility in learning is currently developing rapidly [8]. Multimedia-based learning has many advantages compared to whiteboard and chalk. Multimedia-based learning involves almost all the elements of the senses. The use of multimedia can facilitate students in learning, also the time spent is more effective and efficient. Besides, learning by using multimedia will greatly

increase students' learning motivation, so that achievement can be achieved more optimally [9].

## V. CONCLUSION

Based on the results of the study found the 50 M freestyle swimming learning outcomes of students who use multimedia are higher than those who do not use multimedia. From the hypothesis test using the t test,  $t_{count} > t_{table}$  or  $significance \leq \alpha$  value (0.05) was produced. The conclusion of the study was the 50 M freestyle swimming course using multimedia significantly affected the learning outcomes of students of Sport Education FIK UNP.

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