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# The Effectiveness of the Shadow Lamp Badminton Model as a Footwork and Stroke Training Athlete for PBSI Badminton Athletes in Merauke

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## ABSTRACT

Based on the problems that occur in badminton athletes for Merauke Regency PBSI, namely the difficulty for athletes to master badminton footwork and stroke movements due to the lack of badminton training facilities and infrastructure owned by PBSI Branch Merauke, so there is a need for a solution to overcome these problems. This research has the meaning: Knowing the effect of the Shadow Lamp Badminton Model as a Footwork and Stroke Training Tool for PBSI Merauke Badminton Athletes. The method in this research uses an experimental method in the form of a Quasi Experiment, namely the Non Randomized Control Group Pretest-Posttest Design. The subjects of this study were 14 PBSI Badminton Athletes in Merauke Regency, with male and female gender criteria. this research will find out the difference in these levels of ability of athletes in using the application of electronic knowledge in badminton sports to help athletes practice footwork and badminton strokes through shadow lamps and using conventional models. The instrument to measure the ability of footwork and stroke is the foot circuit test. the results of this research namely, footwork and stroke skills increased. get a significance result of  $0.000 < 0.05$ . This Badminton Model Shadow Lamp is effective as a Footwork and Stroke Training Tool for PBSI Merauke Badminton Athletes.

**Keywords:** *Badminton, Shadow Lamp, Footwork, Stroke*

## 1. INTRODUCTION

Kemenpora through the Agency for Presentation of Sports Statistics Data and Information in conveying that nationally the highest interest of the population in exercising is found in the Provinces[1]. While residents who have an interest in exercising with the lowest percentage are in the Provinces of East Nusa Tenggara (14.1%), Papua (12.9%), and West Papua (12.0%)[2]. The data explains that it turns out that the participation of the Indonesian people in sports activities is very low, especially in Papua Province which includes Merauke Regency. This needs to be a concern of the government and related parties to find solutions to increase community participation rates in sports in Papua Province, especially the people of Merauke Regency[3].

One type of sport that is still not popular and has great potential to be developed in the people of Papua Province is badminton. In fact, Badminton is one of the favorite sports in Indonesia[4], even badminton is one of the sports that always donates medals at every international level Olympic event[5]. This becomes a big problem if it turns out that badminton has not been developed and utilized optimally to explore the potential and competitiveness of the people of Papua Province, especially in Merauke Regency.

Based on the results of observations and discussions with administrators, coaches and badminton athletes from Merauke Regency PBSI, it is known that the low achievement and competitiveness of Merauke Regency badminton athletes in various provincial and national level championship events is due to the difficulty of athletes mastering footwork and badminton

strokes[6][7]. This situation resulted in the people in Merauke Regency feeling less interested and finding it difficult to play and learn the sport of badminton.

One way of solving the problem that is considered the most suitable and good is the need to design a new tool model to help badminton athletes in Merauke Regency practice footwork and stroke movements[8]. Of course new tool models must be created through a scientific research process, so that models of footwork and stroke movement training aids can be produced that are safe, comfortable, attractive and can make it easier for the people of Merauke Regency to play and study badminton sports. Seeing the characteristics and purpose of creating the training aid model, the name that is considered most suitable for this tool model is badminton shadow lamp, namely lights arranged to resemble a badminton court and can be operated automatically and manually. Therefore, it is necessary to have a good synchronization between the science of computer application systems and sports science science in order to produce a good and high-quality badminton shadow lamp tool model[9].

The superior sports profile of Merauke Regency, Papua Province based on the medals won for the last 5 PON are; athletics, rowing and diving, while badminton which is the leading sport of the State of Indonesia at the international level has not been fully developed[10]. The difficulties experienced by the Youth and Sports Service and the Merauke Regency PBSI Branch in developing the badminton sport are due to the lack of facilities and infrastructure available to play and practice badminton. The presence of a footwork and stroke movement training aid model called the badminton shadow lamp is expected to help Merauke Regency badminton athletes hone and improve their badminton playing skills[11], so that indirectly through the use of this tool can be produced Merauke Regency badminton athletes potential and able to compete at the provincial and national levels.

The presence of a footwork and stroke movement training aid model called the badminton shadow lamp is expected to help Merauke Regency badminton athletes hone and improve their badminton playing skills, so that indirectly through the use of this tool can produce Merauke Regency badminton athletes who have the potential and able to compete at the provincial and national levels. In connection with the background of this problem, it is necessary to carry out research to obtain field data regarding the effectiveness of the badminton shadow lamp tool in helping PBSI badminton athletes in Merauke Regency practice footwork and strokes.

## 2. METHOD

Pretest	Treatment	Posttest
T1	X	T2
T2	-	T2

The research used is an experiment [12]. experiment

is a test of causal relationships between variables[13]. The intended research design can be described as follows:

### Figure 1. Design Method

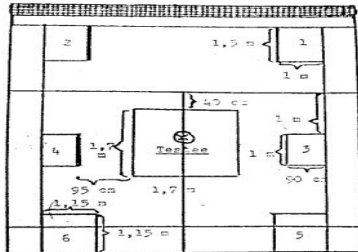
The research used 2 groups of athletes with almost the same characteristics[14][15]. The first characteristic group is the experimental group and the second characteristic group is the control group. The issue that is often the focus of research findings conducted through experiments is the issue of internal validity and external validity. The research rule states that if the internal validity is questioned, then the external validity is also questioned. According to Mohammad Ali (2010: 87)[16], the efforts made by researchers in conducting experimental research are optimizing internal validity and external validity, but if the situation is not possible to achieve, at least trying to maintain internal validity (Testing, Selection, statistical stability, expectations)[17]

Research carried out within club partners that have produced achievements, namely the Ibik Badminton Association which is a gathering place for Merauke Regency badminton athletes who excel and already have an official SK from Merauke Regency PBSI Pengcab. The number of people in each group is 14 people. taking test subjects using purposive sampling. purposive sampling, namely sampling according to predetermined criteria. The research implementation is planned from June to October 2022. The research implementation will begin in June-July 2023, carried out in a range of 16 implementations three times a week, namely Tuesday, Thursday and Saturday.

### Research Instruments

The use of the instrument in this research is a test, carrying out the initial test and the final test using a series of foot tests in badminton. The foot movement agility test method is stepping forward, sideways, and backwards on the badminton court. This test was proposed by Tohar (1992: 200-203)[18] this test has a validity of 0.98 and a reliability of 0.93. Here's how to carry out the leg exercise series test: The aim is to measure the agility of the 6-point shadow in badminton games. Tools and Equipment: 1) Stopwatch and whistle

2) Chalk and plaster 3) Blanks and stationery c. Testors: There are 3 testors with the task of (1) calling testees, (2) recording results, (3) giving instructions. Implementation: 1) The tryouts whose data will be collected are collected and given an explanation about the implementation of the agility measurement test. 2) Before carrying out the test, people try to be given an example of carrying out the agility test first[16].



**Figure 2.** Target Field Instrument for Foot Exercise Circuit Test (Source: Tohar, 1992: 202)[10]

### 3. RESULTS AND DISCUSSION

The final product of model development to maximize the performance of PBSI Merauke badminton athletes practicing footwork and strokes, then in this study looking for the level of influence on the ability of athletes. Before the test subjects, in this case the PBSI Merauke badminton athletes, were given the exercises that had been developed, before the subjects were tested the initial/pretest skills were measured using a series of leg exercises, then the subjects were given treatment. The treatment was given 16 times, the pretest-post test was carried out with the same test instrument. in testing the effect of this development model on 14 PBSI Merauke badminton athletes. Below are the results of the research data obtained:

**Table 1.** Processing shadow lamp Effectiveness

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Shadowlamp	15.3571	14	1.59842	0.42720
	Shadowlamp	12.7857	14	1.31140	0.35049
Paired Samples Correlations					
			N	Correlation	Sig.
Pair 1	Shadowlamp & Shadowlamp		14	0.443	0.113

**Table 2.** Paired Samples Statistics shadow lamp Effectiveness

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Shadowlamp - Shadowlamp	2.57143	1.55486	0.41555	1.67368	3.46918	6.188	13	0.000



**Figure 2.** Product Development Effectiveness

Calculation of the significance value which shows that Ho is rejected and Ha is accepted, so that it is stated that the developed model is effectively used by badminton athletes in Merauke district.

### AUTHORS' CONTRIBUTIONS

BASED ON THE RESEARCH RESULTS THAT HAVE BEEN OBTAINED RELATED TO THE INFLUENCE OF THE DEVELOPMENT MODEL THAT HAS BEEN DECLARED FEASIBLE TO USE, AND DECLARED EFFECTIVE FOR BADMINTON ATHLETES BASED ON THE SIGNIFICANCE VALUE. THE SHADOW LAMP BADMINTON DEVELOPMENT MODEL AS A TRAINING TOOL FOR FOOTWORK AND STROKES FOR BADMINTON ATHLETES WHICH WAS DEVELOPED IS EFFECTIVE FOR INCREASING THE AGILITY OF BADMINTON ATHLETES, AND NOT EXPERIENCING BOREDOM IN TRAINING.

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