Development of Lob Drive Model on Badminton Game in High School Students

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Abstract: **The purpose of this study was to evaluate the effectiveness of the modified badminton lob drive model on badminton lob learning outcomes in students. This study was carried out at SMA Negeri 5 Makassar from March to August 2019, with a total of 60 students participated in the study. This study was an experimental study with non-equivalent pre and post-study design. The research objectives of this study were to evaluate the effectiveness of lob drive model learning for high school students compared to the traditional lob drive. Badminton lob learning outcomes include psychomotor skills assessment during lob driving practice. These skills were assessed in four different stages, namely beginning, implementation, final position, and the average stage. The students were randomly divided into two groups, i.e., lob drive model group (Mod) and lob drive control group (Control). The study result shows that the Mod group had higher mean value in all measured variables compared to that in the control group. Therefore it can be concluded that the badminton lob learning model for high school students is effectively used for learning outcomes improvement.**

Index Terms: **Model development, lob model, badminton.**

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I. INTRODUCTION

Badminton is an individual or group-game that can be performed by one person against one person or two people against two people. This game uses a racket as a bat and a shuttlecock as a hit object. The playing field is rectangular and limited by the net to separate the game area itself and the opponent's game area. Badminton lob aims to drop the shuttlecock in the opponent's game area and to prevent the opponent from hitting the shuttlecock in the game area itself. During the game, each player must try to keep the shuttlecock from touching the floor in the game area itself. In general, basic badminton techniques are grouped into several sections, namely (1) Stance; (2) the racket hand-grips; (3) Footwork; and (4) Drives. The racket hand-grips are further classified into a) American way; b) British way or backhand grip; c) Shakehand or forehand grip or handshake grip; and d) Combination Method. Drives include a) Underarms drives; b) Drives flat or sideways, and c) overhead drives.[1], [2].

Game modification is to analyze and develop subject matter by guiding it in the form of potential learning activities to facilitate students in their learning. This method is intended to guide, direct, and teach students who previously could not be able to, who were less skilled, become more proficient. The way the teacher modifies learning will be reflected in the learning activities provided by the teacher from the beginning to the end of the lesson. Furthermore, physical education (PE) teachers must know what can and must be modified and know how to change it. At the high school education level, problems that often arise are lack of development of PE learning processes, limited facilities, and infrastructure available in schools. This problem is worsening and significantly affects the PE learning process because it is not supported by proper and innovative skills of the PE teachers, especially in developing learning models. Teacher creativity is also essential to be able to create exciting learning activities in addition to supporting facilities. Understanding and skills in emerging methods, media, strategies, and learning models are creativity in increasing student motivation. [3], [4].

Previous observational research conducted at SMA Negeri 5 Makassar showed that in terms of learning the badminton process, several things should be highlighted. These are including 1) The learning method has been delivered in conventional ways. Hence, students feel unhappy, bored, lazy to move. 2) badminton learning takes a long time in mastering some basic techniques and is rarely done by teachers in modifying badminton lob learning to introduce a more comfortable model and useful in learning the game. 3) The PE teachers do not know how to provide models of acquiring the proper basic techniques of badminton to students. The teacher only instructs the students to learn badminton on their own without giving an appropriate example, and (4) Rarely does badminton game material be provided, due to the limited facilities and infrastructure they have.

Based on the description above, therefore, it is crucial to find other learning methods to improve the deficiencies in the PE learning process that is suitable for use and following the level of growth and development of Upper Middle School students. Also, it is crucial to develop a model in learning badminton lobs with modifications matching the current curriculum. Besides, the success rate in PE learning can be evaluated through student participation in learning. It is necessary to develop bad lob learning, which later can be used as a solution to facilitate students in learning badminton effectively.

Badminton Game Skills

Skill is the ability to produce some results to the maximum by spending a little energy or time and energy. Skills in sports are the ability to do the movements and techniques needed in the sport it plays and is the basic movements required in a particular sport. The basic skills needed in badminton games, including how to hold the racket, standing position, leg movements, and hitting skills. Badminton is a game that uses a lot of physical abilities with fast changes and hard drives done within a few seconds, including a long rally. [5]

Furthermore, Ralph B. Ballou outlines some basic skills in badminton games, including; how to hold the racket, ready position, primary hit position, basic drives, series, and leg movements. [6]. Tony Grice suggests basic badminton skills, including forehand grip, backhand grip, some basic drive, service, and footwork consisting of; ready position, receiving service, movement on the field. From this opinion, it can be stated that the skill of playing badminton is the ability to perform actions with one or several techniques in playing badminton appropriately, both in terms of time and situation. The basic skills of badminton that need to be learned in general as follows: how to hold the racket, stand, leg movements, and hit the shuttlecock [7]. A Badminton game is a single game that can be done by one person against one person or two people against two people. This game uses the racket as a bat and shuttlecock as a hit object. The playing field is rectangular and is limited by the net to separate between the game areas' own and the opponent's game area.

Lob technique

The lob drive is a badminton technique by holding the racket in a forehand or shake-hand grip. Lob drive is a type of overhead forehand that aims to push the opponent backward; thus, the defense area of the face is open. This drive is also used as a way to give players a chance to improve their position. Hitting the shuttlecock high into the air means that there is a chance to fix the position again.

The characteristics of a clear blow are the high ball backward, the shuttlecock falls in an upright state, the fall of the shuttlecock near the backline, even better if it falls at the corners of the field. Lob drive is a drive-in badminton game that is carried out to fly the shuttlecock as high as possible towards the back of the field line. There are two ways to do a lob drive; namely, the overhead lob is a lob shot made from the top of the head by flying the shuttlecock soar towards the back. The underhand lob is a low lob drive performed by hitting the shuttlecock under the body and is finally raised high afterward. There are two types of overhead lobs, 1) deep lob where the ball is high back, and 2) attacking lob where the ball is not too high [8].

Lob Drive Learning Model

The learning model is a descriptive design of detailing and creating environmental situations that allow children to interact during the learning process, subsequently producing skill improvement. The quality of learning models can be assessed from two aspects, namely the learning process and product. The learning process refers to whether learning is capable of creating joyful learning situations and encourages students to learn and think creatively actively. The learning product refers to whether the product can achieve the goal, such as improving students' abilities based on the competency standards. [9], [10]

The lob is one of badminton learning components, especially in Upper Middle School. The badminton lob becomes a part of basic movement skills for the upper body in High School. These skills are also known as manipulative skills, and the teachers need to design more attractive learning processes for children so that they are eager to learn them. The learning model can foster and advance the skills. Material for badminton learning, especially the lob, is more likely to be multilateral and integrated skills, which include the following skills: (1) Motor perception skills, (2) Basic motion skills, and (3) Serial physical activity. [11]. The Physical Education Program must be more than just developing the body, but also improving the mind and preparing students to work in the future. At this age, physical education programs play an essential role as a place to learn fair play and to build a good spirit of sportsmanship.

Furthermore, students keen to do more physical activities during their leisure time, and they tend to do the activities in the form of teamwork. Modification of learning material can be performed by dividing the material objectives into three purposes, namely the expansion, refinement, and application purposes.

Modification of Lob Drive Learning

According to Ngasmani and Soepartono, the main reasons for learning modification are; first, children are not adults in small form, physical and mental maturity of children is not as complete as adults. Second, physical education learning approaches are less active, as they are only lateral and monotonous. Third, the vast majority of existing PE learning facilities are accessible for adults only.

The main principle of Physical Education learning modification is to analyze and develop learning material by bringing it down in the form of learning activities, which is potentially expediting students in the learning process. This method aims to guide, direct, and teach students who are previously incapable become more proficient. Many selected sports learning facilities have been modified so that they can provide curriculum-based learning courses yet remain on the desired playing method. The method using to teach skills in lob learning is, in principle, similar to that in teaching methods or training methods for each type of skill.

The development of the lob learning approach in this study uses lob-based games that can train the basic lob technique and develop upper, middle, and lower body abilities at the same time since these three-body components significantly support the lob movement.

Lob learning is classified into cyclic-acyclic combination skills, where acyclic movements will directly follow cyclic movements. This technique enables the utilization of either partial or the whole body method. In lob learning, the elements of movement coordination, accuracy, and timing are also essential in supporting the exercises. Modification of the lob game for High School students aims to develop the skills for body movement. Lob movement is a manipulative motion. The critical key for fostering and enhancing the endurance abilities of students is learning while playing. Modification lob learning can be achieved in various ways, including using different types of equipment such as plastic balls or balloons arranged in such a way, both distance, series, formation, as well as height or width. This model enables the application of a learning curriculum delivered according to the stages of cognitive, affective, and psychomotor development of children.

II. METHODS

This experimental study was carried out in SMA Negeri 5 Makassar. from March to August 2019 using non-equivalent pre and post-test design. This study aims to evaluate the effectiveness of the modified lob drive learning model on badminton lob learning

outcomes in high school students. Some 60 students participated in this study and randomly divided into two groups, namely lob drive model group (Mod) and lob drive control group (Con). Students in Mod-group received a modified lob drive learning model for overhead lob drive skills, including modified shadow shot and lob driving formation. The first consisted of backward, forward shadow shot and back corner shadow-shot while the latter included paired, the triangular, and rectangular formation of lob driving (figure 1 and 2).
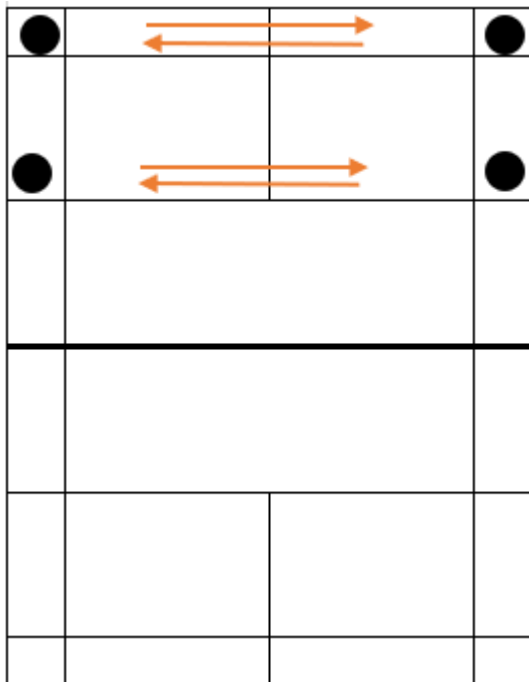
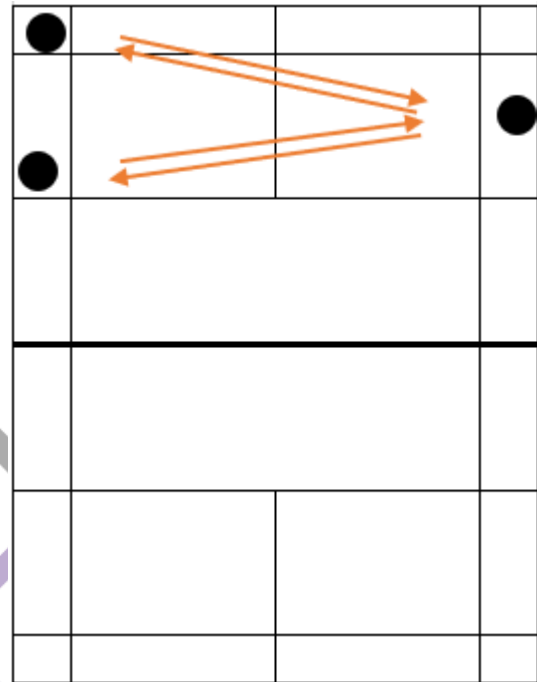Fig 1. Forward shadow shoot technique   Fig 2. The triangular formation of the lob driving model.

Students in Con-Group received a conventional badminton lob learning model, which was performing a paired shuttlecock shot. The experiment was run for 12 weeks, and all activities were recorded in a logbook. Pre-and post-intervention psychomotor learning affective evaluation was conducted on the first day and after the 12th week of the study. Psychomotor skills were assessed in three different stages.

III. RESULT

Analysis of experimental data

The psychomotor assessment of badminton lob consists of three stages, i.e., beginning, implementation, and final position stage. Each step is further divided into two aspects: modified shadow shots and lob driving formation. Figures 1 to 3 shows pre and post-test data collection for each element.
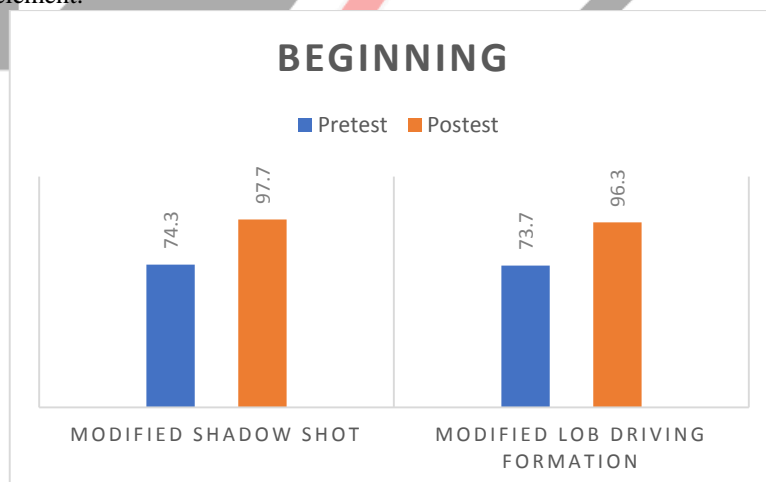

Fig 3. Pre-test and post-test data in the beginning stage.

Figure 1 demonstrates pre and post-test data at the beginning stage. This data shows an increase in psychomotor ability from pre-test to post-test in both modified shadow shot and lob driving formation at the beginning stage. Meanwhile, the result of the two other assessed skills did not look very different.
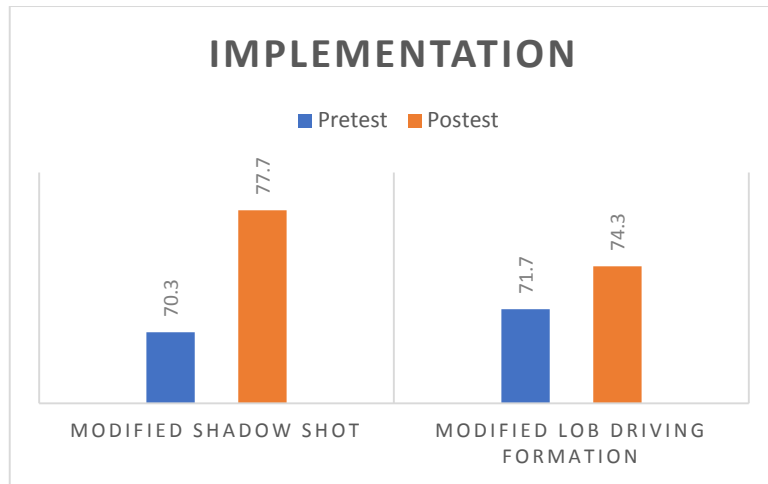
Fig 4. Pre-test and post-test data in the implementation stage

Figure 2 reveals pre and post-test data during the implementation stage. At this stage, there was an increase in ability after applying the lob drive model in the modified shadow shot aspect. The increase is also seen in the modified lob driving formation aspect, but the increase is smaller than the modified shadow shot.
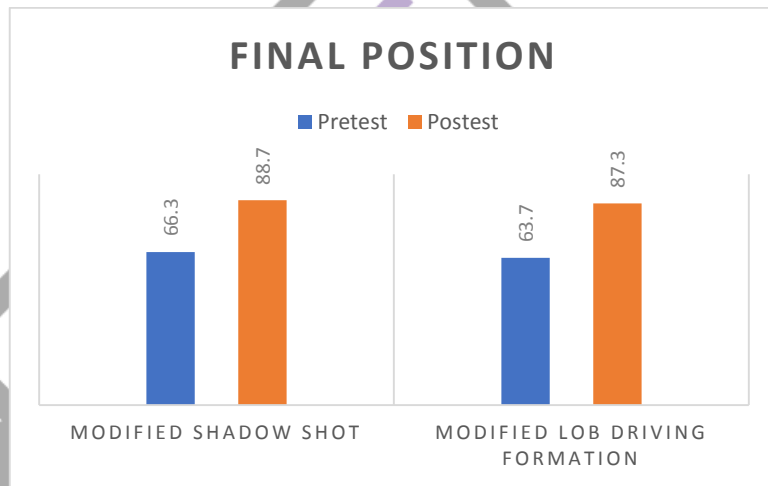

Fig 5. Pre-test and post-test data in the final position stage

Figure 3 demonstrates pre and post-test data at the last position stage. In the final position stage, the increase in pre-test and post-test was also seen in the modified shadow shot and modified lob driving formation aspects. The improvement scores of the two elements are also not much different.
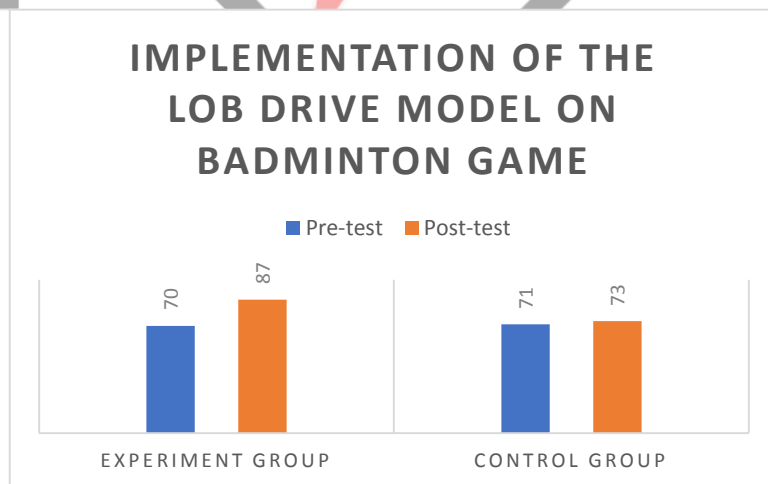

Fig 6. Comparison between the experimental and the control group.

The results of the pre-test post-test in both groups shown in Figure 4. In the experimental group, there was a significant increase in the psychomotor aspect scores of lob badminton skills with a post-test score of 87 higher than the pre-test score of 70. The expansion also occurred in the control group but not significantly with the post-test score 73 and the pre-test score test 71. From the results of the analysis of these data, it can be concluded that the implementation of the lob drive model on the badminton game for high school students.

IV. DISCUSSION

From the study data explained before, it can be concluded that the learning model of badminton lob is effective in physical education learning, especially in learning material of badminton lob. As a new learning design in physical education, the badminton lob model requires detailed explanation and binding rules, in addition to providing a correct learning model of badminton lob [12]. Also, the school facilities and infrastructure strongly support the implementation of this learning model. The essence of developing this learning model is finding dynamic learning activities. The dynamics appear in the motivation of students to follow the practice so that learning outcomes can be achieved.

The researchers found many limitations in this research. Firstly, field trials of this study were being carried out in one area. The researchers should have conducted trials in several different places. The second limitation is the existence of psychological factors such as the movement ability, self-confidence, and other psychological factors were difficult to control (). Thirdly that other factors influence the results of study such as physical factors, including height, flexibility and coordination of movement, and physical condition.

V. CONCLUSION

In the lob badminton learning model, students can learn lob material correctly compared to that in the control group. With the badminton lob learning material that researchers have developed, high school students can understand the badminton lob material effectively and efficiently. Based on the results of the model effectiveness test, it has been proven empirically that the product results in the form of a badminton lob learning model for high school-aged children have excellent effectiveness. It was based on the results of the badminton lob skills tests, which showed that the average value of the posttest results was higher than the average pretest results. So it can be stated that the badminton lob learning model for high school students is effectively used to improve learning outcomes. In developing this research further, the researcher has several suggestions, as follows: For research subjects, it should be done on a larger number of subjects, and high schools participate. The results of the development of the badminton lob learning model can be disseminated to all high school teachers.

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