Development of a Target Games-Based Badminton Smash Training Model for Beginner Players

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Abstract. Badminton games can be played singgle, double, mixed doubles on indoor and outdoor courts. The aim of this research is to develop a badminton smash training model using target games. This research uses the research and development (R&D) method. The proses of collecting data used observation, questionnaires, and documentation. Model analysis techniques used (1) trial in small and large groups; and (2) judgment expert. The results show that there are three types of target in the development of the model namely easy target, medium target, and difficult target. Each type of target consists of 6 (six) training models that are declared feasible. Thus, the target games-based badminton smash training model can be used to improve the smash ability of beginner players.

Keywords*:* Badminton, Smash, Target Games, Model R&D.

1. Introduction

Badminton games can be played in singles, doubles, and mixed doubles on closed courts (indoor) and open courts (outdoor). Children, adolescents, and adults, both men and women, can also play this badminton game. Since elementary school or earlier, children play badminton in formal classes or informal games [1]. Everyone can play it, ranging from children to older people, both male and female players [2]. It is also seen that students and students of the Faculty of Sports Science Universitas Negeri Medan enjoy playing badminton. The high interest of students and female students to improve their ability to play badminton is the basis for achieving sports achievements. Sports achievement is the result of players or athletes participating in sports competitions. To achieve achievements in participating in badminton sports competitions, a player or athlete can first play badminton with basic badminton game techniques. For someone to play badminton well, each individual must be able to hit the shuttlecock from above and below [3]. The smash punch is one of the punches that hit the shuttlecock from above the head. This smash is an important blow that is mastered and widely used but difficult for a badminton player to do. the percentage of strokes during the drive stroke match was 39.9%, the percentage of lob was 24.0%, smash with a percentage of 14.8%, drop shot 11.7%, netting was 9.7%, and the percentage of service strokes using short service was 98.3%, and long service 1.7% [4].

Thus, from the percentage of the use of basic badminton hitting techniques during the match, this smash is one of the punches widely used by players or athletes when competing. A smashing shot in a badminton game is performed by hitting the shuttlecock as hard as possible and sharply down and toward the opponent's field. Smash is a technique in badminton to attack the opponent and gain points [5]. Smashes as offensive strikes are considered one of

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the most important strikes during the match, and they can make a point and increase the chance to make the point when integrating smashes by one of the types of deception [6]. Smash is an aggressive overhead shot with a downward trajectory [7].

A player's or athlete's smash can improve through practice. Training is an activity or activity carried out by athletes to improve their performance regularly, planned, with increasing loads. training is an activity or activity consisting of various forms of attitudes and movements, directed, repetitive, with increasing loads to improve ability efficiency [8]. Training is a sports activity carried out systematically over a long time, improved progressively and individually, leading to the characteristics of physiological and psychological functions to achieve predetermined goals [9]. Thus, badminton athletes who practice smash will be able to improve if done regularly, planned, with increasing loads. Based on observations of beginner players (students and female students) who practice badminton at Faculty of Sport Science Universitas Negeri Medan, the coach in training smash shots drill beginner players. The coach is seen feeding the shuttlecock to beginners across the net and standing in the middle of the field to hit as hard and as hard as possible shuttlecock from the coach's feed toward the target-directed by the coach. The visible effect of the results of smash shots of novice players is still a lot of concern at the net, out of the field, the direction of the shuttlecock is not by the direction determined by the coach. The direction of the target made by the coach is not gradual, but the smash target is targeted directly in a direction that is difficult for novice players to achieve. In addition, the variety of smash training models the coach uses is also minimal, resulting in boredom and boredom during training.

Sports activities with minimal variations will make athletes quickly feel bored in doing so. Boredom in training will be detrimental to the progress of their achievements [10]. Therefore, to eliminate boredom and boredom while practicing while at the same time being able to improve the results of beginner smash shots must be an element of variation in many training models. The variation of the training model must also be interesting, easy to apply, and can eliminate boredom. The variation of the smash training model carried out by the researcher is a variation of the target game/target games-based training model. Target game is where the player will get a score if the ball or other similar projectile is thrown or hit with direction on a predetermined target, and the fewer strokes towards the target, the better, and focussed on game activities the require precision and high accuracy in obtaining scores [11]. Target game is a form of throwing or hitting balls or projectiles and the like directed at a specific target. The score is obtained if it can hit the target [12]. Target games training is an exercise where players will get a score if the ball or other similar projectile is thrown or hit direction on a predetermined target[13]. Thus, target games are a form of the game by hitting the shuttlecock with basic smash techniques toward the target that is expected to get points/score. Thus, this variation of the target games-based badminton smash training model is likely suitable for badminton smash training for students who practice badminton at FIK Unimed. Based on this background, this research is focused on researching the development of a target games-based badminton smash training model to improve the ability of beginner player' badminton smash shots.

2. Method

This research uses the research and development (R&D) method. The stages of research and development of the Borg and Gall R&D (research and Development) model consist of 10 stages. These stages consist of preliminary research, development planning, expert validation, small-scale group trials, revision of small-scale group trials, large-scale group trials, revision

of large-scale group trials, effectiveness testing, final product revision,, dissemination, and implementation. However, the results of this study are only at the large-scale group trial stage. The test subjects in this study were 50 people, namely 20 subjects for small-scale group trials and 30 for large-scale group trials. This research was conducted from january 2023 to august 2023 on beginner players (students and college students) who play badminton at the faculty of sports science, state university of medan, north sumatra. Data collection using observation, questionnaires, documentation. The analysis of this research product was validated by 3 (three) badminton experts, and then small-scale and large-scale group trials were conducted. To determine the level of feasibility of the training model developed, the following classification criteria were determined:

Table 1. Eligibility Percentage Classification Criteria [14]

Percentage	Description
81%-100%	Very Feasible
61%-80%	Feasible
41%-60%	Less Feasible
21%-40%	Not Feasible

3. Result and Discussion

Based on observations of beginner players (students and female students) who practice badminton at Faculty of Sport Science Universitas Negeri Medan, the coach in training smash shots drill beginner players. The coach is seen feeding the shuttlecock to beginners across the net and standing in the midleof the field to hit as hard and as hard as possible shuttlecock from the coach's feed toward the target-directed by the coach. The visible effect of the results of smash shots of novice players is still a lot of concern at the net, out of the field, the direction of the shuttlecock is not by the direction determined by the coach. The direction of the target made by the coach is not gradual, but the smash target is targeted directly in a direction that is difficult for novice players to achieve. In addition, the variety of smash training models the coach uses is also minimal, resulting in boredom and boredom during training. Therefore, the researcher created a badminton smash training model based on target games totaling 18 training models. The target games-based badminton smash training model consists of 3 (three) types of targets, namely: easy, medium, and difficult. Each type of target consists of 6 (six) training models. Easy target type training models are V_{easy} *Smash* (V_eS) Model, L_{easy} *Smash* (L_eS) Model, U_{easy} *Smash* (U_eS) Model, N_{easy} *Smash* (N_eS) Model, W_{easy} *Smash* (W_eS) Model, M_{easy} *Smash* (M_eS) Model, Medium target type training models are V_{medium} *Smash* (V_mS) Model, L_{medium} *Smash* (L_mS) Model, U_{medium} *Smash* (U_mS) Model, N_{medium} *Smash* (N_mS) Model, W_{medium} *Smash* (W_mS) Model, M_{medium} *Smash* (M_mS) Model, Difficult target type training models are $V_{difficult}$ *Smash* (V_dS) Model, $L_{difficult}$ *Smash* (L_dS) Model, $U_{difficult}$ *Smash* (U_dS) Model, $N_{difficult}$ *Smash* (N_dS) Model, $W_{difficult}$ *Smash* (W_dS),) Model, $M_{difficult}$ *Smash* (M_dS) Model. After the training model is made, the product design validation test is carried out. The following are the results of badminton expert validation of the product design of the target games-based smash training model developed:

Table 2. Product Design Validation Test Results

No	Model	Experts Assessment Results			Criteria
		Badminton Experts	Coaching Experts	Game Experts	
1	V_{easy} *Smash* (V_eS) Model	Feasible	Feasible	Feasible	Feasible
2	L_{easy} *Smash* (L_eS) Model	Feasible	Feasible	Feasible	Feasible
3	U_{easy} *Smash* (U_eS) Model	Feasible	Feasible	Feasible	Feasible
4	N_{easy} *Smash* (N_eS) Model	Feasible	Feasible	Feasible	Feasible
5	W_{easy} *Smash* (W_eS) Model	Feasible	Feasible	Feasible	Feasible
6	M_{easy} *Smash* (M_eS) Model	Feasible	Feasible	Feasible	Feasible
7	V_{medium} *Smash* (V_mS) Model	Feasible	Feasible	Feasible	Feasible
8	L_{medium} *Smash* (L_mS) Model	Feasible	Feasible	Feasible	Feasible
9	U_{medium} *Smash* (U_mS) Model	Feasible	Feasible	Feasible	Feasible
10	N_{medium} *Smash* (N_mS) Model	Feasible	Feasible	Feasible	Feasible
11	W_{medium} *Smash* (W_mS) Model	Feasible	Feasible	Feasible	Feasible
12	M_{medium} *Smash* (M_mS) Model	Feasible	Feasible	Feasible	Feasible
13	$V_{difficult}$ *Smash* (V_dS) Model	Feasible	Feasible	Feasible	Feasible
14	$L_{difficult}$ *Smash* (L_dS) Model	Feasible	Feasible	Feasible	Feasible
15	$U_{difficult}$ *Smash* (U_dS) Model	Feasible	Feasible	Feasible	Feasible
16	$N_{difficult}$ *Smash* (N_dS) Model	Feasible	Feasible	Feasible	Feasible
17	$W_{difficult}$ *Smash* (W_dS)	Feasible	Feasible	Feasible	Feasible
18	$M_{difficult}$ *Smash* (M_dS) Model	Feasible	Feasible	Feasible	Feasible

Based on Ttable 2 above, the research product design validation test results conducted by filling out an expert questionnaire are known. The assessment results of the three badminton experts stated that the smash training model based on target games was declared feasible. The following is a recapitulation of the hali assessment on each indicator of the training model variation.

Table 3. The results of the recapitulation of expert judgment on each indicator model

Badminton Experts					
No	Indicators	∑x	∑xi	%	Desc
1	Feasibility	50	72	69	Feasible
2	Ease	49	72	68	Feasible
3	Safety	51	72	71	Feasible
4	Attractiveness	53	72	74	Feasible
	Total	203	288	70	Feasible
Coaching Experts					
No	Indicators	∑x	∑xi	%	Desc
1	Feasibility	48	72	67	Feasible
2	Ease	48	72	67	Feasible
3	Safety	50	72	69	Feasible
4	Attractiveness	52	72	72	Feasible

Total		198	288	69	Feasible
Game Experts					
No	Indicators	∑x	∑xi	%	Desc
1	Feasibility	55	72	76	Feasible
2	Ease	50	72	69	Feasible
3	Safety	57	72	79	Feasible
4	Attractiveness	56	72	78	Feasible
	Total	218	288	76	Feasible
	Overall Assessment Category			**72**	**Feasible**

Based on Table 3 above regarding the results of the badminton expert product recapitulation on each indicator, it is known that the average percentage of badminton experts validation results is 70% in the feasible category, 69% coaching experts, 76% game experts in the feasible category, and overall product assessment of 72% is categorized as feasible to be tested on subjects in small-scale group trials. This small group trial stage aims to test whether the training model for basic badminton smash techniques based on target games is carried out or practiced by novice players in badminton training. this small group trial was conducted on 20 novice players as model users. The results of the small group trial showed that overall, the target games-based smash training model can be implemented on beginner players (students and female students) Faculty of Sport Science Universitas Negeri Medan who practice badminton. Then, in implementing the training model trials in small-scale groups, the researcher also gave a questionnaire to the research subject as the main actor in carrying out activities in the field with the following recapitulation results.

Table 4. Recapitulation of Small Group Trial Results Data

No	Indicators	∑x	∑xi	%	Description
1	Feasibility	1060	1440	74	Feasible
2	Attractiveness	1080	1440	75	Feasible
3	Usability	1038	1440	72	Feasible
4	Safety	1095	1440	76	Feasible
	Total	4273	5760	74	Feasible

Based on Table 4, the average percentage of the results of the small group trial of 20 people is 74%, so overall, the product developed is in the category worthy of being tested in a large-scale group test. 30 novice players carried out the product trial stage in the large group. Large group trials were conducted on the target games-based badminton smash training model product consisting of 18 training models that had been tested previously. Then, in implementing the training model trials in large-scale groups, the researcher also gave a questionnaire to the research subject as the main actor in carrying out activities in the field with the following recapitulation results.

Table 5. Recapitulation of Large Group Trial Results Data

No	Indicators	∑x	∑xi	%	Description
1	Feasiblity	1650	2160	76	Feasible
2	Attractiveness	1682	2160	78	Feasible
3	Usability	1630	2160	75	Feasible
4	Safety	1688	2160	78	Feasible
	Total	6650	8640	77	Feasible

Based on Table 5, it can be seen that the average percentage of the results of the large group trial of 30 people is 85%, so overall, the product developed is in the category worthy of effectiveness trials, and there are no more revisions based on field notes during the large group trial. Based on the results of expert validation and group trials, it is known that the overall model of badminton smash training based on target games for beginner players is declared feasible. Thus, the target games-based badminton smash training model can be used to improve the smash ability of beginner players. This is likely because the target games-based badminton smash training model is carried out gradually from easy to difficult. Then novice players practicing badminton smash based on target games feel happy and interested in always following the training.

4. Conclusion

The results show that there are three types of target in the development of the model namely easy target, medium target, and difficult target. Each type of exercise consists of 6 models that are declared feasible. Easy target type training models are V_{easy} *Smash* (V_eS) Model, L_{easy} *Smash* (L_eS) Model, U_{easy} *Smash* (U_eS) Model, N_{easy} *Smash* (N_eS) Model, W_{easy} *Smash* (W_eS) Model, M_{easy} *Smash* (M_eS) Model, Medium target type training models are V_{medium} *Smash* (V_mS) Model, L_{medium} *Smash* (L_mS) Model, U_{medium} *Smash* (U_mS) Model, N_{medium} *Smash* (N_mS) Model, W_{medium} *Smash* (W_mS) Model, M_{medium} *Smash* (M_mS) Model, Difficult target type training models are $V_{difficult}$ *Smash* (V_dS) Model, $L_{difficult}$ *Smash* (L_dS) Model, $U_{difficult}$ *Smash* (U_dS) Model, $N_{difficult}$ *Smash* (N_dS) Model, $W_{difficult}$ *Smash* (W_dS),) Model, $M_{difficult}$ *Smash* (M_dS) Model. Thus, the target games-based badminton smash training model can be used to improve the smash ability of beginner players.

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