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

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Abstract. Badminton is a sport that can be played using a racket and small ball called shuttlecock either single, double or mix double. The purpose of this study was a develop the basic techniques of dropshot in badminton using target games. The research method was research and development using Borg and Gall models. The proces of collecting data used observation, questionnaires, and documents. Model analysis techniques used (1) judgment expert; and (2) trial in small and large groups. The results show that that there are 21 variations of target game-based badminton dropshot training models for beginner players. The game-based dropshot training variations consist of 7 variations of easy category exercise model, 7 medium category exercise model variations, and 7 difficult category exercise model variations. So, the target game-based badminton dropshot training model that has been declared feasible by expert judgment can be used to train beginner palyers' basic dropshot shot technique skills.

Keywords: Badminton, Dropshot, Target Games, Model R&D

1 Introduction

Badminton is one of the most popular sports in the world [1]. Badminton, which is one of the most popular sports worldwide [2]. Badminton is one of the most popular racket sports [3]. Badminton is a popular sport in Indonesia for children and adults [4]. In Indonesia, children and adults alike are fond of playing badminton. This can be seen by the large number of people playing badminton in both indoor and outdoor courts in cities and villages [5]. There are many reasons why badminton is popular, such as its ability to improve physical and mental health, its relatively low risk of injury, ease of play, and durable racquets, making it accessible to all ages [6]. Anyone can play badminton from children to older people, and it's played by both males and females [7]. Badminton is one of the sports included in the small ball game sports group that can be played indoors and outdoors using a ball and racket as tools to hit the ball [8]. Badminton games can be played in singles, doubles, and mixed doubles on indoor and outdoor courts [9]. In badminton games, a player must be able to hit the shuttlecock with various types of shots [10]. The types of shots that must be mastered include the service, lob, dropshot, net shot, underhand shot, and drive [11].

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One of the technical skills that must be possessed by badminton athletes is the forehand dropshot [12]. Dropshot is a shot performed by hitting the shuttlecock slightly hard, causing it to dip and land as close to the net as possible on the opponent's court.. Dropshot is a shot aimed to place the shuttlecock as close as possible to the net and as quickly as possible on the opponent's court [13]. A good dropshot is one where the shuttlecock lands in front of the opponent's attack line and has a slightly fast speed and dips [14]. Dropshot is one of the techniques used to gain points [15]. Therefore, Dropshot is one of the essential basic techniques that must be mastered by a player or athlete in badminton to gain points. Hence, the basic technique of the dropshot can be mastered through practice. Training is a repetitive and progressive process to enhance petential in order to achieve maximum performance. Athletes follow long-term training programs to enhance their mental and physical conditions for competition in a performance [16]. Training as a systematic sports activity carried out over a long period, progressively increased and individualized to achieve physiological and psychological function characteristics to reach predetermined goals [17]. The purpose of training is to increase the athlete's skills and work capacity to optimize athletic performance [18]. Thus, training is an activity or exercise undertaken by athletes or players of one of the sports branches to improve their performace regularly.

To become skilled in playing badminton, especially in the basic technique of the dropshot, a player or athlete must practice the dropshot regularly, with a planned approach, and with increasing difficulty. Observations of beginner players training in badminton at the Universitas Negeri Medan (UNIMED), revealed that coaches rarely provide training for the basic technique of the dropshot. The dropshot is practiced less frequently compared to other basic badminton techniques. Sometimes, coaches are seen training the dropshot technique by by feeding the shuttlecock (cock) to the player across the net, who then hits the shuttlecock to a spot close to the net as directed by the coach, without using any specific target for the player's shot. With such minimal dropshot training methods used by the coach, players are less able to perform the basic dropshot technique effectively. Players also feel bored and uninterested during dropshot practice due to the limited training models provided by the coach. The lack of varied dropshot training methods leads to a decline in interest in practicing the dropshot. Conversely, if there were more varied dropshot training models, it could foster a desire to continue practicing, and boredom would decrease. Therefore, it is necessary to introduce additional variations of dropshot training models. These should be game-based dropshot training variations.

A game is defined as "an activity undertaken for entertainment or enjoyment," and games are very important for the development of children and adolescents because they contribute to their cognitive, physical, social, and emotional well-being. Games as a crucial factor for child development in terms of social, emotional, physical, and cognitive skills [19]. Games are a free activity that enhances players' intrinsic motivation [20]. The game used in this study is a target game. Target game is a type of game in which a ball or projectile is thrown or hit towards a specific target, with points awarded when the target is hit [21]. Target game training as an exercise where players score points by accurately throwing or hitting a ball or similar projectile towards a predetermined target [22]. In target games, players earn points when they accurately direct a ball or similar projectile towards a set target, with fewer hits required to reach the target being more favorable. These games focus on activities that require precision and high accuracy to score points [23]. Target games are designed to improve hand-eye coordination, agility, balance, concentration, and the ability to follow instructions to hit a designated target [24]. Thus, target games involve hitting a shuttlecock or ball towards a valuable target to score points. Therefore, the development of target game-based dropshot

training models is believed to be suitable for badminton training for students at the Universitas Negeri Medan. Based on this background, the study focuses on developing a target game-based dropshot training model for beginner badminton players.

2 Method

This research uses the Research and Development (R&D) model according to Borg & Gall. The Research and Development (R&D) by Borg & Gall used in this study consists of 10 (ten) stages; preliminary research, development planning, expert validation, small-scale group trials, revisions from small-scale group trials, large-scale group trials, revisions from large-scale group trials, effetiveness testing, final product revisioans, dissemination and implementation. Starting from March 2024 to August 2024, this research was conducted on beginner players at Universitas Negeri Medan. Data collection was carried out through observation, questionnaires, and documentation. There were 3 experts and 46 participants in this study; 12 participants in th small-scale group test, 34 participants in the large-scale group test. The following are classification criteria to determine the effetiveness of the training model developed.

Table 1. Criteria for Classification of Training Model Feasibility Percentage [25]

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

3 Result and Discussion

Observation results show that rarely provide training on the basic dropshot technique. Dropshot training is practiced less frequently compared to other basic badminton techniques. Occasionally, coaches are seen training the dropshot technique by feeding the shuttlecock to players across the net, instructing them to hit it close to the net without using a specific target as a goal for the shot. Due to this minimal dropshot training model used by the coaches, players are less capable of executing the basic dropshot technique. Players also feel bored and uninterested during dropshot training because of the lack of training variations provided by the coaches. The limited dropshot training model decreases the players' interest in practicing this technique. Conversely, if more varied dropshot training models were used, it would foster a greater desire to continue practicing, and boredom would decrease. Therefore, it is necessary to introduce additional variations of dropshot training models. These training model variations are game-based.

As a result, 21 variations of target game-based badminton dropshot training models were obtained. The game-based badminton training variations in the easy target category include: I_{easy} *Dropshot* (I_eD) ,odel, V_{easy} *Dropshot* (V_eD) model, L_{easy} *Dropshot* (L_eD) model, U_{easy} *Dropshot* (U_eD) model, N_{easy} *Dropshot* (N_eD) model, W_{easy} *Dropshot* (W_eD) model, M_{easy} *Dropshot* (M_eD) model, The medium target category includes: I_{medium} *Dropshot* (I_mD) model, V_{medium} *Dropshot* (V_mD) model, V_{medium} *Dropshot* (V_mD) model, U_{medium} *Dropshot* (U_mD) model,

N_{medium} *Dropshot* (N_mD) model, W_{medium} *Dropshot* (W_mD) model, M_{medium} *Dropshot* (M_mD) model, and the difficult target category includes: $I_{difficult}$ *Dropshot* (I_dD) model, $V_{difficult}$ *Dropshot* (V_dD) model, $L_{difficult}$ *Dropshot* (L_dD) model, $U_{difficult}$ *Dropshot* (U_dD) model, $N_{difficult}$ *Dropshot* (N_dD) model, $W_{difficult}$ *Dropshot* (W_dD) model and $M_{difficult}$ *Dropshot* (M_dD) model.

Table 2. Results of Product design Validation bay Three Experts

No	Modell	Experts Assement Results			Criteria
		Badminton Experts	Coaching Experts	Game Experts	
1	I_{easy} *Dropshot* (I_eD) Model	Model 1-21 is Feasible	Model 1-21 is Feasible	Model 1-21 is Feasible	Model 1-21 is Feasible
2	V_{easy} *Dropshot* (V_eD) Model				
3	L_{easy} *Dropshot* (L_eD) Model				
4	U_{easy} *Dropshot* (U_eD) Model				
5	N_{easy} *Dropshot* (N_eD) Model				
6	W_{easy} *Dropshot* (W_eD) Model				
7	M_{easy} *Dropshot* (M_eD) Model				
8	I_{medium} *Dropshot* (I_mD) Model				
9	V_{medium} *Dropshot* (V_mD) Model				
10	L_{medium} *Dropshot* (L_mD) Model				
11	U_{medium} *Dropshot* (U_mD) Model				
12	N_{medium} *Dropshot* (N_mD) Model				
13	W_{medium} *Dropshot* (W_mD) Model				
14	M_{medium} *Dropshot* (M_mD) Model				
15	$I_{difficult}$ *Dropshot* (I_dD) Model				
16	$V_{difficult}$ *Dropshot* (V_dD) Model				
17	$L_{difficult}$ *Dropshot* (L_dD) Model				
18	$U_{difficult}$ *Dropshot* (U_dD) Model				
19	$N_{difficult}$ *Dropshot* (N_dD) Model				
20	$W_{difficult}$ *Dropshot* (W_dD) Model				
21	$M_{difficult}$ *Dropshot* (M_dD) Model				

From Table 2 above, it can be seen that the product design validation test results were obtained from three experts through the completion of a questionnaire. Based on the assessments by these three badminton experts, it was concluded that the 21 dropshot training models based on target games for beginners were deemed feasible. Below is the summary of expert evaluations of the training model developed..

Table 3. Results of the Recapitulation of Expert Judgment on the Training Model Developed

BADMINTON EXPERTS					
No	Indicators	∑x	∑xi	%	Desc
1	feasibility	54	84	64	Feasible
2	ease	53	84	63	Feasible
3	safety	57	84	68	Feasible
4	attractiveness	56	84	67	Feasible
	Total	220	336	65	Feasible
COACHING EXPERTS					
No	Indicators	∑x	∑xi	%	Desc
1	feasibility	57	84	68	Feasible
2	ease	55	84	65	Feasible
3	safety	58	84	69	Feasible
4	attractiveness	57	84	68	Feasible
	Total	227	336	68	Feasible
GAME EXPERTS					
No	Indicators	∑x	∑xi	%	Desc
1	feasibility	58	84	69	Feasible
2	ease	56	84	67	Feasible
3	safety	59	84	70	Feasible
4	attractiveness	60	84	71	Feasible
	Total	233	336	69	FEASIBLE
OVERALL ASESSMENT CATEGORY				**67**	**FEASIBLE**

Based on Table 3, regardring the summary of product evaluations by the three badminton experts on each indicator, it is found that the average percentage of validation that the average percentage of validation results from the badminton expert is 65%, categorized as feasible; the coaching expert is 68%, categorized as feasible; the games expert is 69%, categorized as feasible. Overall, the product evaluation result is 67%, categorized as feasible and ready for testing with the subjects in the small-scale group trial. The purpose of the small-scale group trial is to test whether the badminton dropshot training model based on target games can be practiced by beginner players during badminton training at Universitas Negeri Medan. This small-scale group trial was conducted 12 beginner players as subjects and users of the model. The results of the small group trial indicated that the overall dropshot training model based on target games could be implemented by beginner players practicing badminton. During the small group trial of the dropshot training model, the researcher gave questionnaire to the subjects. The following is a summary of questionnaire data obtained from participants during small-scale group trials.

Table 4. Summary of Data from the Small-Scale Group Trial

No	Indicators	∑x	∑xi	%	Description
1	Ease	657	1008	65	Feasible
2	Attractiveness	678	1008	67	Feasible
3	Usability	646	1008	64	Feasible
4	Safety	686	1008	68	Feasible
	Total	2667	4032	66	FEASIBLE

Based on Table 4, the results of the small-scale group trial show an a average percentage of 66% indicating that the developed research product is categorized as feasible for small-scale group testing. The small-scale group trial was conducted with 12 beginner badminton players. This trial involved testing the dropshot training model based on target games, which consists of 21 different training models. The results of the small-scale group trial demonstrated that the target games-based dropshot training model could be effectively implemented by beginner players training at Universitas Negeri Medan. Following the successful validation and implementation of the product in the small group trial, the next step is to conduct a large-scale group trial. During the large-scale group trial, the researcher also administered a questionnaire to the 34 beginner players who participated as primary subjects in the field activities. The following is a summnary of the data obtained from the large-scale group trial.

Table 5. Summary of Data from the Large-Scale Group Trial

No	Indicators	∑x	∑xi	%	Description
1	Ease	1897	2856	66	Feasible
2	Attractiveness	1949	2856	68	Feasible
3	Usability	1855	2856	65	Feasible
4	Safety	1980	2856	69	Feasible
	Total	7681	11424	67	FEASIBLE

Based on Table 5, it can be seen that the average percentage of the large-scale group trial with 34 participants was 67%, indicating that the deelopved product is categorized as feasible, and no further revisions are needed based on field observations during the large-scale trial. Based on the expert validation results and the small and large group trials, the overall dropshot training model based on target games for beginner players has been deemed feasible. Thus, the developed dropshot training model based on target games can be used to enhance the dropshot skills of beginner players. This effectiveness is attributed to the gradual progression of the training model, ranging from easy to difficult variations. Additionally, beginner players practicing with the varied target game-based dropshot training models have shown enjoyment and interest in badminton dropshot practice.

4 Conclusion

The research results show that there are 21 variatioans of target game-based badminton dropshot training models for beginner players. The game-based badminton training variations in the easy target category include: I_{easy} *Dropshot* (I_eD) ,odel, V_{easy} *Dropshot* (V_eD) model, L_{easy} *Dropshot* (L_eD) model, U_{easy} *Dropshot* (U_eD) model, N_{easy} *Dropshot* (N_eD) model, W_{easy} *Dropshot* (W_eD) model, M_{easy} *Dropshot* (M_eD) model, The medium target category includes: I_{medium} *Dropshot* (I_mD) model, V_{medium} *Dropshot* (V_mD) model, V_{medium} *Dropshot* (V_mD) model, U_{medium} *Dropshot* (U_mD) model, N_{medium} *Dropshot* (N_mD) model, W_{medium} *Dropshot* (W_mD) model, M_{medium} *Dropshot* (M_mD) model, and the difficult target category includes: $I_{difficult}$ *Dropshot* (I_dD) model, $V_{difficult}$ *Dropshot* (V_dD) model, $L_{difficult}$ *Dropshot* (L_dD) model, $U_{difficult}$ *Dropshot* (U_dD) model, $N_{difficult}$ *Dropshot* (N_dD) model, $W_{difficult}$ *Dropshot* (W_dD) model and $M_{difficult}$ *Dropshot* (M_dD) model.

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