



## **Book Development of Volleyball Smash Exercises Variations for Volleyball Coaches in Palembang**

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### **Abstract**

A variety of volleyball smash practice books has been successfully developed for volleyball club coaches in the city of Palembang. The development of a volleyball smash variation practice book for coaches was carried out using the ADDIE model development research method. Data collection techniques using questionnaires while data analysis using quantitative descriptive analysis. The validity of developing a volleyball smash variation practice book for coaches was assessed by five experts consisting of one volleyball learning expert and one language expert, as well as three volleyball coaches. The sample consisted of 20 volleyball club coaches in the city of Palembang who were selected by purposive sampling. The results of the study include: 1) A book on variations of volleyball smash training has been produced for coaches of volleyball clubs in Palembang with the validation results of linguists 91.33% (very worth using), ease of use of the book 93% (very worth using), material suitability 94.67% (very worth using), 2) The implementation results show 93% (very worth using).



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## INTRODUCTION

Sport has a very important role in life. In modern times today it is very difficult to separate from sports both to obtain achievements and just to maintain physical condition to stay healthy. Sports is one of the efforts to improve the quality of human resources, so that the government makes sports a means of National Development. This can be seen in article 25 paragraph 4 of Law Number 3 of 2005 concerning the National Sports system that: National sports aims to maintain and improve health, fitness, achievements, human qualities, instilling moral values and noble morals, sportsmanship, discipline, strengthening and fostering national unity and unity, strengthening national resilience, dignity, and national honor (Indonesia, 2005). By exercising, it can form a human being who is physically and spiritually healthy and can also form a disciplinary disposition so that it is formed into a quality human being (Wahyu Cirana et al., 2021).

The progress and development of the volleyball game that is happening today is very good, so it is hoped that many will contribute to the development, creation of new findings in the form of good forms of exercise for the future covering physical, technical, and tactical / strategy and mental aspects. So that every problem that will be faced can be overcome by continuing to improve themselves, by developing, evaluating and improving from all supporting sectors and continuing to look for more effective and efficient methods and techniques in order to produce athletes whose achievements are better and finally get a more accomplished team (Endriani, 2017). Volleyball is one of the physical activities that are in the game and sports activity group (Yudiana, 2015). The game of volleyball is essentially a ball game, so the application of various basic playing techniques, the idea is to put the ball into

the opponent's area without being received or the ball touches the ground in the opponent's area by crossing the net first (Rachmalia, 2022).

In the realm of training, different ages have an important influence on a person's performance in participating in training activities. In addition, the exercise program must also be associated with improving physical health and fitness. Smash is a way to turn off the ball to get points from opponents that are done from various angles or parts of the field, it takes a variety of smashes that can deceive the opponent who immediately kills the opponent.

The basic smash technique is an attack technique that is often used to kill the ball in the opponent's field (Panggraita, 2022). Smash ability not only how to hit the ball with a strong course, exercise should also include where the ball was redirected (Rio Wakhid Hujjatul Islam, 2019). A person who is good at smashing, or in foreign terms called a "smasher", must have agility and be good at jumping and have the ability to hit the ball as hard as possible". That way a good smasher must have agility and have a strong jump and have a strong punch to create points in the game of volleyball (Sukrawan, 2020).

According to Lardika & Salam (Risma & Jatra, 2020) Basic techniques are an important and influential factor and are needed in the game of volleyball. To have good basic technical ability a volleyball player must perform exercises regularly, programmatically and continuously. To obtain good basic engineering skills can only be done by doing exercises, programmatically, and continuously. This is in accordance with what is conveyed by Boreham (Risma & Jatra, 2020) that performance optimization is the result of long-term and structured exercises.

The training process must also be given interesting variations to prevent athletes from experiencing boredom, in the

process of training, this ESS component is the basis for the coach to determine and provide training variations to athletes aged 11-15 years for the long term, so in this study and development the author includes one of the components of physical condition that corresponds to sports, especially the endurance of the limb muscles. Leporace et al (Hariyanti, Sulistyorini, 2020) Increasing muscle endurance There are athletes who need intensive training, one of the exercises that can optimize the lower limbs for high jumps is plyometrics. Overview of volleyball players based on the elements of physical condition that must be possessed: 1) strength, 2) speed, 3) explosive power, 4) muscular endurance, 5) stamina and 6) agility (Amin, 2020).

Some of the main contributing factors to this deficiency are the tendency in routine training sessions that training activities lack much variety, exercise form activities are rarely divided into separate parts of the exercise so that students (players) are forced to do smash exercises directly with one whole movement, and the lack of constraint-based forms of exercises from each student (player) in doing the smash, so that overall the exercise process or program seems less systematic with models and variations of exercises that are quite good as training material (Piru et al., 2021).

As a reference for professional coaches in coaching volleyball clubs, coaches know the advantages and disadvantages of each athlete trained. The coach can also read the game played by the opponent at the time of the match. Where the coach must also have an attractive game to give as many points as possible. In this case, it takes a good coach to improve a volleyball game in the smash field. Smashes that are done in a game, if done repeatedly with the same conditions, are certainly very easy to read by the opponent's block, with this a variation of

the smash is needed that can provide points and is not easy to read by the opponent.

Study of the literature on the development research method that became a reference, namely the e-book-based volleyball learning model and was developed as a guide for sports lecturers in teaching volleyball courses (Endriani, 2022).

Based on this problem as a first step, researchers felt it was important to develop a variation book of volleyball smash exercises that was specifically focused on trainers for the development of smash variation skills in a volleyball game.

## METHODS

This type of research is used to develop products. The research method uses development research methods with the ADDIE model approach. The steps taken include: 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) Evaluation (Spatioti, 2022). The stages of the development research model are more rational than other research models (Mulyatiningsih, 2011).

## Participants

### 1. Expert Review

Expert validation is carried out at the book product development stage. The book product validation process is carried out to see the feasibility of the book product being developed. The expert is given a questionnaire to validate the book product. The results are in the form of quantitative and qualitative data. Quantitative data is in the form of percentage results while qualitative data is in the form of input results or suggestions expressed by experts. In detail, research participation is as follows:

- The initial product of the book was validated by 5 experts, namely a volleyball learning expert, a linguist and 3 volleyball coaches

## 2. Implementation

The implementation of the book product uses a sample of 20 volleyball coaches in Palembang who have been selected by purposive sampling.

### Sampling Procedures

The criteria for the validity of the development of a volleyball smash practice variation book for coaches were assessed by five experts who were one volleyball learning expert and one expert, and three trainer practitioners. Product tests were carried out on 20 volleyball club coaches in Palembang

The research sample used purposive sampling with criteria including: 1) a volleyball coach domiciled in Palembang, 2) experienced more than 10 years, 3) comes from a volleyball club in Palembang, 4) has a volleyball coaching license, 5) is a former athlete regional and national level. The research sample consisted of 20 volleyball coaches.

### Materials and Apparatus

Data collection using a questionnaire. Questionnaires were given to experts at the expert validation stage of the book product being developed and the implementation stage. The questionnaire was prepared using a Likert scale (1-5 intervals). Questionnaires were given to experts at the product validation stage. The experts used are 1) volleyball learning experts, 2) language experts, 3) volleyball coaches. At the implementation stage, the questionnaire was used to see the feasibility of the book product being developed.

### Procedures

The researcher applied the method of implementing the development of a volleyball smash variety book for volleyball coaches in Palembang as follows:

1. The researcher compiled a volleyball smash variation book.
2. The volleyball coach reads and practices variations of the volleyball smash according to the guidelines for the smash variation book that was developed.
3. The volleyball coach gives an assessment of whether the smash variations contained in the book can be implemented or not.

### Design or Data Analysis

Quantitative descriptive analysis was carried out after the quantitative data obtained through questionnaires derived from expert validation data and book product implementation data were collected. Quantitative data analysis in the form of a percentage using the formula:

$$P = \frac{\sum x}{\sum xi} \times 100 \%$$

Description:

$\sum x$  = The total score obtained  
 $\sum xi$  = Total maximum score

From the results of calculating the percentage is then classified using a rating scale to determine the feasibility of the product being developed. The clarification can be seen in the following table:

**Table 1.** Clarification

Percentage	Clarification
0 - 20%	Very Not Worth Using
20,1% - 40%	Not Worth Using
40,1% - 60%	Worth Using With Repair
60,1% - 80%	Proper to use
80,1% - 100%	Very Worth Using

## RESULT

In detail the results obtained at each stage of the research are as follows:

## 1. Analysis

The research began with field observations at the Kenzie Volleyball Club in Palembang regarding the exercises carried out at the volleyball club. The result of an interview with the coach who coached at the volleyball club was that it was not fully cohesive of the team in carrying out the variation of the smash. Where the result was felt by interviews with smashers, that there was still an inaccuracy in the feeding of the bait.

## 2. Design

The next stage in research is product design. In this case product design is the manufacture of a product in the form of "development of a volleyball smash variation training book for volleyball club coaches in Palembang". After going through the planning stages, the researcher decided to develop a variation book on volleyball smash exercises for volleyball club coaches in Palembang.

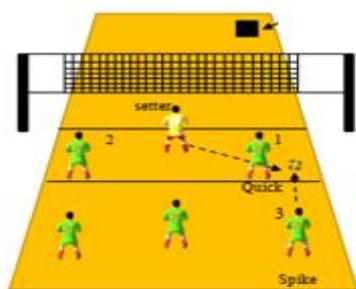


Figure 1. Product Display

In a variety of smash practice books for volleyball coaches developed it contains titles, objectives, implementation procedures, goals, pictures. In this book, pictures are the main and very important part, but also include various information to clarify volleyball coaches in understanding pictures. It is hoped that this book of variations on smash drills for volleyball coaches will make it easier for coaches to understand the material for variations on smash drills.

## 3. Development

The next stage in the study is product development. In this case, the product design is the manufacture of a product in the form of "development of a variation book of volleyball smash exercises for volleyball club coaches in Palembang". After going through the planning stage, the researcher determined the development of a volleyball smash variation exercise book for volleyball club coaches in Palembang to be used for volleyball coaches. The development of the volleyball smash variation book for coaches of the volleyball club in Palembang was formed in the form of a volleyball smash variation book.

The initial product was validated by 5 experts, namely a volleyball learning expert, a linguist and 3 coach volleyball. The results of expert validation of book products developed are as follows:

Table 2. Revision Improvements to the Book Based on Expert Feedback

1. Improvements to the appearance of the smash variation image design for volleyball coaches
2. The addition of a name to each player
3. Addition of goals, executions, and objectives to volleyball smash variation steps
4. Coloring of smash variation books for volleyball coaches
5. Volleyball smash variation book name change

Table 3. Expert Validation Results About Language

Question Number	A 1	A 2	A3	A4	A5	Σx	Σxi
1	5	5	5	5	5	25	25
2	5	5	5	4	4	23	25
3	4	5	4	5	4	22	25
4	4	5	5	5	5	24	25
5	3	4	5	4	4	20	25
6	4	5	5	4	5	23	25
7	4	4	5	4	5	22	25
8	3	5	4	5	5	22	25
9	4	5	4	5	4	22	25

10	5	5	5	5	4	24	25
11	5	5	4	5	5	24	25
12	4	5	4	5	5	23	25
<b>Total</b>	<b>5</b>	<b>58</b>	<b>55</b>	<b>56</b>	<b>55</b>	<b>27</b>	<b>30</b>
	<b>0</b>					<b>4</b>	<b>0</b>
	<b>P</b>					<b>91,33 %</b>	

The results of the initial product development regarding the language of developing a variety of volleyball smash practice books for volleyball club coaches in Palembang showed 91.33% that the book developed included a very worth using classification for use, this could be interpreted as developing a variety of volleyball smash practice books for Volleyball club trainers in Palembang can be tested to the next stage.

**Tabel 4.** The Results of Expert Validation Regarding The Ease of Using The Book

Question Number	A1	A2	A3	A4	A5	Σx	Σxi
1	4	5	5	5	5	24	25
2	4	5	5	5	5	24	25
3	4	5	4	4	4	21	25
4	4	5	5	5	4	23	25
5	4	5	5	4	5	23	25
6	4	5	5	4	5	23	25
7	4	5	5	5	5	24	25
8	4	5	5	5	5	24	25
<b>Total</b>	<b>32</b>	<b>40</b>	<b>39</b>	<b>37</b>	<b>38</b>	<b>186</b>	<b>200</b>
	<b>P</b>					<b>93%</b>	

The results of the initial product development regarding the ease of book use showed 93% that the book developed included a very worth using classification for use, this could be interpreted as developing a variety of volleyball smash practice books for Volleyball club trainers in Palembang can be tested to the next stage.

**Tabel 5.** Expert Validation Results Regarding the Suitability of the Material

Question Number	A	A2	A3	A4	A5	Σx	Σxi
1	4	5	5	5	5	25	25
2	5	5	5	4	4	23	25
3	5	5	4	5	4	22	25
4	4	5	5	5	5	24	25
5	4	5	5	4	4	20	25
6	4	5	5	4	5	23	25
7	4	5	5	4	5	22	25
8	5	5	4	5	5	22	25
9	4	5	4	5	4	22	25
10	5	5	5	5	4	24	25
11	5	5	4	5	5	24	25
12	5	5	4	5	5	23	25
<b>Total</b>	<b>5</b>	<b>54</b>	<b>60</b>	<b>56</b>	<b>55</b>	<b>27</b>	<b>30</b>
	<b>0</b>					<b>4</b>	<b>0</b>
	<b>P</b>					<b>94,67%</b>	

The results of the initial product development regarding the suitability of the material for the development of a variety of volleyball smash training books for volleyball club coaches in Palembang showed 94.67% that the book developed included a very worth using classification for use, this could be interpreted as developing a variety of volleyball smash practice books for Volleyball club trainers in Palembang can be tested to the next stage.

#### 4. Implementation

It is hoped that the development of this book will provide a new atmosphere in training as well as provide enthusiasm and motivation for athletes in training. From the data from volleyball practice, the researcher developed a variation book on volleyball smash exercises for volleyball club coaches in Palembang with the aim of increasing motivation and providing a new atmosphere in volleyball practice.

The next stage is implementation for volleyball coaches totaling 20 people in the city of Palembang who have been selected by a purposive sample. Implementation result is 93% that the book developed included a very worth using classification for use.

**Table 6.** The Results of the Implementation of the Developed Book Product

Question	Sample																				Σx	Σxi
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20		
1	5	5	5	5	4	5	5	5	4	5	5	4	5	5	5	5	4	5	5	5	96	100
2	4	5	5	5	5	5	4	4	5	5	4	5	5	5	5	5	4	5	4	4	93	100
3	4	4	5	4	5	4	5	4	4	5	4	5	5	4	4	4	5	5	5	4	89	100
4	4	4	5	5	4	5	5	5	5	4	4	4	5	5	5	4	5	5	5	5	93	100
5	5	3	4	5	4	5	4	4	5	4	5	4	5	5	4	5	4	5	4	4	88	100
6	4	4	5	5	4	5	4	5	4	5	5	4	5	5	4	5	5	4	5	4	92	100
7	4	4	4	5	5	5	4	5	5	5	4	4	5	5	5	5	4	5	4	5	92	100
8	5	5	5	4	5	4	5	5	5	5	4	5	5	5	5	5	4	5	5	5	96	100
9	4	4	5	4	5	4	5	4	5	5	5	4	5	4	4	5	4	5	4	5	90	100
10	4	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	4	5	97	100
11	5	5	5	4	5	4	5	5	5	5	5	5	5	4	4	5	4	5	4	5	94	100
<b>Total</b>																					<b>1020</b>	<b>1100</b>
	<b>P</b>																				<b>93%</b>	

## 5. Evaluation

After the developed book was validated by experts and changes were made based on input and suggestions from experts, the developed book product was declared very fit for use and then implemented to 20 volleyball coaches in Palembang. The results of the implementation are stated to be very suitable for use. Based on this, the development of a variety of volleyball smash training books for volleyball club coaches in Palembang is declared very suitable as an alternative guideline for implementing volleyball smash training for athletes.

## DISCUSSION

The developed book has gone through several stages in development research. In the expert validation stage, the product developed in the form of a book is included in the very worth using classification. Meanwhile, at the implementation stage, books are included in the very worth using classification.

## CONCLUSION

1. A variety of volleyball smash training books has been produced for coaches of volleyball clubs in Palembang with expert validation results on language of 91.33% (very worth using), ease of use of the book 93% (very worth using), suitability of the material 94.67% (very worth using).
2. The results of the implementation of the volleyball smash drill variation book for volleyball club coaches in Palembang are 93% (very worth using).

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