



VOLLEYBALL SMASH SKILL TRAINING MODEL USING RUBBER TIRE AIDS FOR STUDENTS OF SMK

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Abstract:

The purpose of this study is to produce a product in the form of volleyball smash skills training methods using rubber tire aids to improve smash skills in volleyball games. The research method used is the development of Borg and Gall. Based on the data collected, it is known through the material expert and media expert tests conducted twice each, obtained the results of the material I test with a percentage of 68.75% (quite valid) and the results of II with an average of 87.50% (valid). While the results of media experts obtained results I amounted to 65.40% (quite valid) and results II with an average of 84.62% (valid). From small scale trials (N = 8), results with an average percentage of 81.19% (valid) and large scale field tests (N = 30) obtained results with a percentage of 90.83% (valid). Based on the results of the data obtained, it can be concluded that the product development of the smash skills training model with rubber tire aids for volleyball extracurricular athletes after going through several stages including preliminary test stages, expert validation tests, small and large group tests, model effectiveness test concluded can be accepted by users, especially schools that have and are active in coaching volleyball.

Keywords: Training Model; Volleyball Smash; Rubber Tire.

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1. Introduction

Researchers observation in the field, mastery of basic skills of smash on volleyball games is still low and the lack of motivation of students in the learning practice of volleyball smash skills, such as students are not given learning skills models Smash, learning always monotonous and not much variation done during the learning of volleyball smash skills, as well as the lack of understanding students to the importance of mastering effective and efficient smash skills[1], this Because the technique of volleyball smash is considered a fairly complicated technique to be taught even more physical education teachers who do not have the background of volleyball sports in particular there are some schools that the physical education teachers is not derived from the scope of sports education[2].

The situation is influenced by several factors in the manner of educators, who have not yet maximised the learning process, using less precise models or methods of learning and not in accordance with the characteristics of the learning materials and Learners[3]. While the factors of

the students among others, the lack of motivational learners in learning and feel difficulties with the material delivered. While the means and infrastructure factor is the lack of learning media such as volleyball, where the volleyball does not match the ratio between the number of learners with volleyball available. This is what causes learners to be less active and more pending a turn to perform the smash skills learned[4].

Therefore, physical education teachers need learning models with the right approach to improve the basic techniques of volleyball smash skills[5]. One of the solutions models of smash exercises that appeals to learners is to use rubber band tools. With these tools learners will gain new experience and can increase the motivation of learners to follow a ball smash exercise.

2. Materials and Methods

The research was proposed to find out the work of the volleyball smash training aids product. The method used in this research is the development research of R & D (Research and Development). Because the final result of this study will produce a smash exercise aids product in a volleyball sports branch. Called Research-based development R & D[6]. According to Sugiyono, "the development research method is a research method used to produce certain products, and to review the effectiveness of these products". Development research is a study used to create new products and or to develop existing products based on the analysis of the needs of the field (observation, interview, initial necessity questionnaire). In this study there are various references in drafting development steps[7].

The parent reference belongs to Borg, W. R and Gall, M.D. 1983. Educational Research An Introduction. New York: Longman. In his book written 10 steps are used. Broadly, the development of model of the smash skills exercise using rubber tire tools in the approach or method of development model of Research and Development (R&D) from Borg and Gall, education development Research is a Process used to develop and validate educational products. The result of development research is not only the development of an existing product but also to find knowledge or answers to practical problems in the field.

The steps according to Borg and Gall are done as follows: 1) Research And Information Collecting (conducting preliminary research, literature review, field observations) to identify the problems encountered in the field; 2) Planning (planning of identification, skill definition, purpose formulation, test order determination, expert test, small scale test, and big Group Trial) 3) Development of the preliminary form of Product develop type/form Initial products include: Material preparation, book/module/video preparation and device evaluation) 4), Preliminary Field Testing (conducting preliminary field trials using 8 subjects, this data collection using a test run directly on a sample Follow the extracurricular volleyball 5) Main Product Revision (revise the product based on input and suggestions from the results of the initial field trial) 6) Main Field Testing (Conducting a main field test with 30 subjects) 7) Operational Product Revision (revisions to operational products, based on input and suggestions on key field trials) 8) Operational Field Testing (conducting a main product test with subject as many as 30 subjects. Data analysis based on expert feedback assessments include feedback and suggestions, 9) Final Product Revision (revision of the final product, based on suggestions in field trials), 10) Dissemination and Implementation (urination and implementing products, reporting and disseminating products

through scientific meetings and journals, partnering with publishers for commercial product socialization, and monitoring distribution and quality control)[8]. In this study there are various references to develop development steps.

The research was proposed to find out the work of the volleyball smash training aids product. To produce certain products required research that is analytical needs and to test the effectiveness of the product. This development research one of them is to have a product. In this research and development is focused to produce the product of a smash game of volleyball exercise aids to serve to train athletes, it is necessary research to test the effectiveness of the product. For more details about the design of this research is as follows.

Subject	Pre-Test	Treatment	Post Test
R	O ₁	P	O ₂

The research target for this study is that students who participated in the extracurricular volleyball activities in SMK Nurul Huda BarosSerang District as a small group test and as a large group test and their effectiveness test. The technique of taking research subjects using the total sampling technique, which all students participated in the extracurricular volleyball activities at SMK Nurul Huda Baros District Serang.

3. Results and Discussions

The following analysis has been done against the students of extracurricular volleyball in SMK Nurul Huda Baros District Serang.

Description of Statistical Skills Preliminary Test Smash in the Volleyball Games Extracurricular Participants

Table 1: Analysis Results Description of preliminary test Data

		Preliminary Test
N	Valid	30
	Missing	0
Mean		66,27
Median		65,00
Mode		62
Std. Deviation		4,378
Variance		19,168
Range		17
Minimum		59
Maximum		76

Based on the preliminary test data presented in the table 4.15 above obtained the minimum value of 59, the maximum value is 76; An average of 66.27; Median 65.00; 62 mode, standard deviation 4.378 and variance 19.168. Description of the results of the study presented in the ditribusi of frequencies with the formula for many classes = $1 + 3.3 \text{ Log } N$; Range = Maximum value - minimum value, and class length with formula = range/Many classes, (Sugiyono). These results can be seen in the distribution table of the data frequency of the initial test smash blow below:

Table 2: Data frequency distribution preliminary test blow Smash

No	Interval classes	Frequency		
		Absolute	Relatively (%)	Cumulative (%)
1	59 – 61	2	6,67	6,67
2	62 – 64	9	30,00	36,67
3	65 – 67	7	23,33	60,00
4	68 – 70	4	13,33	73,33
5	71 – 73	6	20,00	93,33
6	74 – 76	2	6,67	100
Amount		30	100	

Description of final Test stats Smash skills in this extracurricular basketball game. The research result of the model of smash exercises with a rubber tire tool in a volleyball game at the time of Posttest (final Test) can be seen in the following table 3.

Table 3: Summary description of final Test Data

		Final Test
N	Valid	30
	Missing	0
Mean		90,00
Median		90,00
Mode		88
Std. Deviation		3,414
Variance		11,655
Range		14
Minimum		83
Maximum		97

Based on the final test results presented in the table 4.17 above obtained the minimum value of 83, the maximum value 93, average 90.00, median 90.00, 88 mode, standard deviation 3.414 and variance 11.655. Description of the results of the study presented in the ditribusi of frequencies with the formula for many classes = $1 + 3.3 \text{ Log } N$; Range = Maximum value - minimum value, and class length with formula = range/Many classes[9]. These results can be seen in the table below:

Table 4: Data frequency distribution final Test skills Smash

No	Interval classes	Frequency		
		Absolute	Relatively (%)	Cumulative (%)
1	83 – 85	3	10,00	10,00
2	86 – 88	9	30,00	40,00
3	89 – 91	9	30,00	70,00
4	92 – 94	7	23,33	93,33
5	95 – 97	2	6,67	100,00
Amount		30	100	

Percentage improvement in Smash skills using Rubber tire tools

Previously described the dexective statistics of smash skills using rubber tire aids in SMK Nurul Huda Baros District Serang. To know the magnitude of effectiveness of the model exercise smash skills with a rubber tire tool by the following formula[10].

$$Percentage\ increase = \frac{M_D}{M_{pre}} \times 100\%$$

The results of the research model of training of smash skills by using the rubber AIDS tire obtained average pretests of 66.27 whereas in the average result of the difference between the initial test and the final test is 23.79. Once known the average value of pretests and the average difference, the increase in the percentage can be calculated as follows:

$$Percentage\ increase = 23,79/66,27 \times 100\%$$

$$Percentage\ increase = 0,359 \times 100\%$$

$$Percentage\ increase = 35,89\%$$

These results can mean the effectiveness of the training model by using rubber tire tools of 35.89% and the remaining 64.11% is another factor

Data Analysis Testing

Testing the effectiveness of models conducted in the study is is by conducting tests on 30 athletes extracurricular volleyball in SMK Nurul Huda Baros District Serang Given the treatment using models exercise smash skills With a tire rubber apparatus. To test the effectiveness in this study use the test-t (paired sample t test) at a significant level of 5%. The hypothesis test results (test-T) can be seen in table 4.19 as follows:

Table 5: Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Preliminary tests – Final test	23,733	5,464	.998	25,774	21,693	23,790	29	,000

Based on table 4.10, the value tcount is 10.099 and then consulted with t table with degrees of freedom (N-1) = 29 obtained t count > t Table (23.790 > 2.045) or by comparing the probability value (Sig.) 0.000 < 0.05 which means there are a significant difference between the before and after the treatment of a smash exercise model with a rubber tyre apparatus. So from the results of the analysis that the model of smash exercises using rubber tire tools can improve the smash skills in volleyball games.

4. Discussion

Based on the acquisition of the above test results can be described that models of training of smash skills by using rubber tyres for athletes extracurricular volleyball participants are given as well as effective in improving the skill of the smash with tools Auxiliary rubber tyres for extracurricular athletes[11]. The products produced by researchers certainly have advantages and also disadvantages[12]. Therefore, in order to achieve a better product, researchers will give advice, understanding and input. The input is as follows:

- 1) Need to be developed again model exercise smash skills by using rubber tyres for the athletes of various extracurricular participants and innovation as well as productivity.
- 2) Coaches should be able to give attention and supervision to athletes when conducting training sessions to be directed and when athletes experience a weakness in the trainer's task precedence

Table 6: Product Model of Smash exercises Using the Rubber tyre apparatus

<i>Image model and Description</i>
<p><i>The Model 1:</i></p> <ul style="list-style-type: none"> • The rubber tire holder stands behind the player who will perform the smash prefix exercises. • Players who will do the prefix exercises of the smash waist tied with rubber tires. • Player who will do the prefix drill smash stand on line 3 meters • Rubber tire Holders provide a cue-starting • The player performs a start of the smash prefix with a short step and the final step is a long step back to its original reposition. • Holders of rubber tyres are attractive in order to take the prisoner. <p><i>Model 2:</i></p> <ul style="list-style-type: none"> • Rubber tires tied to the pole net volleyball. • Players who will do the prefix exercises of the smash waist tied with rubber tires • In front of the player who will do the initial exercises placed two people who hold a volleyball that stands on the right side circle and the left side with a distance of 3 meters from the player who will do the prefix exercises. • On the cue of the player who performs the exercises begin to advance with a short initial step and a long end step then touch the hands on the helper friend who holds the ball on the right side then rewind the initial place and make the same move to the sides Left and so on until the set time expires

Model 3 :

- Rubber tire holders Stand behind the player who will do the exercises.
- Players who will do the prefix exercises of the smash waist tied with rubber tires.
- Players and holders of rubber tyres standing on the side of the field with an already in a backward position.
- On the cue start the player who performs the exercises doing two steps forward fore and the holder of the rubber tire gives prisoners to follow the player who performs the exercises.
- The movement continues until the other side of the field. After the player's side is turned to change roles.

Model 4 :

- Seated holders at distances of 1.5 meters from the net by holding a rubber tire that has been tied to the waist of the player who will do the leap exercises while hitting the ball.
- The ball throwers stand on the opposite side of the net of the player who will do the exercises.
- Players who will do exercises at the implementation stage/LEAP stands approximately 30-40 cm close to the net.
- The ball thrower throwing his balls soar in front of the player who performs the exercises at the time the ball is thrown players jumping to hit the ball over the net and directed at the target set
- Rubber tire holders provide prisoners by holding the rubber he held.
- After hitting the player landed and the thrower immediately throws the ball back and continuously until the time is set.

Model 5 :

- Holder of the rubber tyre seated at a distance of 1.5 meters behind the player who will do the exercise while holding the rubber.
- The ball holder stands on the opposite side of the net, one player is on the left and one player on the right side with the player who will do the exercises.
- The player who will do the jump motion workout smash stands close to the net.
- The ball holder on the right side of the player who performs the ball in advance and the player who performs the training immediately jumps then hit the ball in the field where the ball is standing.
- After the player drops, the left ball thrower soars the ball. Players who do the exercises immediately shift a little to the left and then jump and hit the ball over the net.

- The rubber holders remain seated and give prisoners to the players who are doing the exercises.

Model 6 :

- The player stands by the field with a waist that has been tied with rubber tires.
- Handle rubber squats with a distance of 1 meter from the player who will do the exercise.
- The ball connectors stand on the front right side of the player who will do the exercises.
- The ball's Sling soared the ball over the front of the player, immediately the player who did the exercise immediately jumped up and hit the ball with the rubber holder on hold.
- The player, the ball thrower and the holder of the rubber tire move forward and make the same movement until the other side of the field.

Model 7 :

- Player stands at line 3 meters in front of the net at position 4
- The handle/squat holder by holding the rubber tyre with a distance of 50cm behind the player.
- The ball throwers stand close to the net to slow down the ball.
- The ball throwers soar up the ball, then the player performs a prefix move by stepping, jumping to hit the ball and making the landing.
- Rubber Tire Holders Try to give prisoners to the player.
- After hitting the player back to its original position and ready to perform the movement again until the specified time.

Model 8 :

- Player stands at line 3 meters in front of the net at position 4.
- The holder/squats holding the rubber tyre with a distance of 50 cm
- Softed the ball standing close to the net to slow down the ball.
- The thrower bounced the ball upward, then backward/shifted to position 3.
- Players who perform exercises perform the prefix movement stepping, jumping to hit the ball and landing, then follow the shift to position 3 with followed rubber tire holders to always give prisoners to the player.
- At position 3 players, the holder and the ball thrower do the same thing and shift back to the position of the two

Field test stages include small group tests with limited respondents, subsequently conducted a large group test with more respondents, this is to obtain input as a consideration of the final product

revision and to know the effectiveness of Products. Trials are conducted on a wider group to determine the effectiveness of the products developed and obtain inputs to revise the final stage product. Data obtained from field tests in the form of quantitative data from the charging poll by students of extracurricular participants. Quantitative data analysis is an activity after data from the entire respondent or other data source collected (Sugiyono). Furthermore, calculated by calculating the percentage statistics on each exercise model, the calculation of the whole percentage results in the resulting data that is presented in the following table:

Table 7: Result of small group test evaluation (n = 8)

Exercise Model	Results	Description
1	87,5%	Valid
2	75%	Valid
3	87,5%	Valid
4	75%	Valid
5	75%	Valid
6	87,5%	Valid
7	75%	Valid
8	87%	Valid
Average	81,19%	Worth using with Valid predicate

The steps taken are as follows: (1) Implementing a research subject group; (2) Carry out pre-tests; (3) test the model of the smash exercises with the rubber tires for extracurricular participants, (4) perform the post-test; (5) Look for the average score of pre-test results and post-test, then compare the two; (6) Look for the difference of the second average discrepancy through statistical method (test-T) recurrence to determine if there is a significant influence from the use of the exercise model. The effective test results of the model conducted in this study is to conduct a test of 30 athletes extracurricular participants given the treatment using the model of the smash skill exercise with the tire rubber aids.

5. Conclusions and Recommendations

Based on the results of research conducted by researchers can be submitted, from the results of field trials and discussion of research results can be concluded as follows that (1) This Model of developed smash skill training has a tendency to have been able to create an atmosphere of exercise which is more conducive and good than in the previous exercises done daily. This is evident from the enthusiasm of the feeling of delight, gained a new motion experience. (2) Test model enhancement, proven and empirical answer that product result in the form of training model of smash skills for novice athletes especially the extracurricular participants have an excellent degree of effectiveness. That indicates the presence of a very significant increase is to look at the average value of pre-test 66.27 while the average post-test 90.00 with a percentage increase of 35.89%. So, model A smash exercise with an effective rubber tire tool to improve your smash skills in this volleyball game.

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