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SMASH TRAINING VOLLEYBALL “LS” MODEL FOR BEGINNERS AGES JUNIOR HIGH SCHOOL

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Abstract. The purpose of this study was to produce an affective and tested variation of the volleyball smash training model for beginner in junior high school. The research method used in this study is the ADDIE development model (*Analysis, Design, Development, Implementation, Evaluation*) by using five stages and with the research subject being three volleyball extracurricular coaches in Junior High School. This research begins with needs analysis, product planning, development, implementation and evaluation. The instruments used in this study include an assessment questionnaire to experts to test the validity of the variation of the "LS" volleyball smash training model and an assessment questionnaire to assess the effectiveness of the model by volleyball extracurricular coaches in Junior High Schools. The data analysis technique used in this study is a descriptive percentage analysis technique. This research produces a variety of exercise models that meet the criteria, are valid and effective. The research recommendation should be before the distribution of the "LS" volleyball smash training model for junior high school beginners, it is re-tested to athletes/students to be more effective and efficient.

Keyword : smash, training, volley ball, ADDIE

INTRODUCTION

Volleyball developed in various countries including Indonesia in 1928 which was brought by the Dutch. Volleyball games are very much in demand in various levels of society as evidenced by the many volleyball fields in urban areas and even in rural areas as well as the many activities held in inter-school, inter-agency, inter-company and other championships.

The volleyball game begins with a serve shot from the service area. The basic rule used is that the ball must be reflected on the hands, arms, or the front of the body and limbs. The ball must be crossed into the opponent's court over the net. Basic technical volleyball game skills, namely: serving, passing, bait, smash, block, and receive.

A player must master basic techniques and advanced techniques to be able to play volleyball effectively. In volleyball matches, the factors that influence victory are the quality and quantity in attacking the opponent, spike/smash is a punch or attack technique that aims to make the ball land in the opponent's area, without being blocked or detained.

Mastery of basic smash techniques in volleyball is very important, the success of a team in winning volleyball is largely determined by the smash. Because smash is a

way to win points. The smash technique is the most difficult technique in volleyball because it requires good physical condition and maximum movement coordination. Smash requires strong power and the right timing (Setiawan et al., 2018).

Smash hits are influenced by jumps, arm muscle strength, hand flexibility, waist flexibility and good ball placement. Ideally, the volleyball smash should have a strong hit when the hand is in full contact with the ball at the top so that the ball runs steeply at high speed, if the ball is higher above the net, the ball can be hit sharply down. Smash is a deadly hard hit because it makes the ball difficult to receive or return.

A good shot can be obtained with effective training exercises. It takes an exercise model in order to achieve the maximum goal of the exercise. In the realm of training, different ages have an important influence on the performance of athletes in participating in training. In addition, the exercise program must also be associated with improving physical health and fitness. Program for junior high school students, students want new skills and develop their minds to learn fair play, good sportsmanship and want to use their free time.

In volleyball training, if a coach is lacking in developing creativity, the athlete lacks interest in participating in training, especially for athletes who have experienced

trauma injuries. For this reason, a coach must be able to carry out tasks and adopt new training models that can help athletes' problems and achieve training goals, especially in the smash section. This is sometimes difficult for coaches to realize. Weaknesses in volleyball training, which often occurs in the development of a monotonous model, often makes athletes have difficulty participating in volleyball training. This is what happened to students at Junior High School 9, Tambun.

The weakness of volleyball sports training that often occurs is the provision of a monotonous training model so that it often makes athletes experience boredom in participating in volleyball training. This is reinforced by the results of interviews and statements from several extracurricular coaches in Junior High School, these shortcomings and mistakes often occur due to the lack of training models and variations of volleyball smash training and coaches still use conventional training models that applied, can be seen in the following table:

Table. 1
 The Update of the "LS" Volleyball Smash Research Conducted for Beginners of Junior High School Age

General (conventional) exercises	<i>smash volleyball</i> "LS"
The coach only directs as usual	Models are easy to learn

Exercise does not match the level of ability and age being trained	The model is in accordance with the character of the student's needs
Trainers apply based on experience	The training model has been validated by experts
Exercise tends to be monotonous	The results of the "LS" exercise vary

Through the "LS" volleyball smash training model, it is hoped that it can help athletes learn better smash skills. And can be used as a reference for coaches, especially when providing smash training material through the smash training model so that athletes can practice enthusiastically when given difficult exercises.

Related to the statements that have been stated above, it shows that it is necessary to develop a volleyball smash training model, which can later be used as a solution to facilitate students in practicing smash more effectively.

Volleyball

According to Ahmadi, "volleyball is a complex game that is not easy for everyone to do, because in volleyball it requires really reliable coordination of motion to carry out all the movements in the volleyball game." Even so, this does not prevent people from learning more deeply because of the high level of interest that occurs in society (Ahmadi, 2008).

Another advantage of volleyball is also expressed by Papageorgiou (2002) who states "Volleyball is a game that is suitable for both sexes and for players of all ages and abilities and can be adapted to allow players with a physical or mental disability to play at competitive level" (Papageorgiou, 2002). Games that can be played by both men and women, even for people with special needs, of course, according to the level of difficulty in competing. Barbara L Viera and Bonnie Jill Ferguson stated other advantages of the game of volleyball, among others:

(1) It is adaptable to various conditions that may present themselves, (2) It can be played with any number on a side from two, which is extremely popular in the beach game, to six, which is the number used for interscholastic, intercollegiate, junior, and club play, (3) It can be played and enjoyed by all ages and ability levels, (4) It can be played on many surfaces—grass, wood, sand, and various artificial surfaces, (5) It is an excellent co-ed activity, (6) It is an exciting spectator sport, (7) It can be played indoors or outdoors, (8) It is an extremely popular recreational activity with numerous leagues in business, community, and school intramural programs, (9) It requires few basic rules and skills, and (10) It has limited equipment needs."(Viera & Ferguson, 2010).

Based on this statement, volleyball has the advantage that it can be played in various conditions, this game can be modified with the number of people, can be

played between schools, colleagues, and volleyball clubs, besides that it can be played by all ages and at any level of ability. This game can be done in all forms of field areas, sandy, grassy, cemented and so on. Another advantage of this game is that it is an amazing game because through this volleyball game it can arouse the interest of the local audience, this game can be played outside or indoors.

This game is even used as a business field by some people and is used as a school intramural program. In this game requires some basic rules and skills that are not limited by equipment. In fact, we can find volleyball games being carried out between villages or known as village galas which make volleyball games so popular among the community. According to Atmasubrata (2012) volleyball is a "sport game played by two opposing groups. Each group has six players and there is also a variation of beach volleyball where each group only has two players."

Volleyball games that have been clearly defined regarding the facilities and infrastructure can still be changed flexibly by looking at the situations and conditions that exist around the community. So based on the explanation of the theories above, volleyball is a team game played by 6 people in each team by playing putting the ball into the opponent's area by crossing the net as an

obstacle and trying to win the game by turning off the ball in a certain way or technique. .

Smash Volleyball

smash is a punch or attack technique that aims to make the ball land in the opponent's area, without being blocked or detained (Setiawan et al., 2018). Spiking is also called hitting or attacking. It is one of the most exciting and challenging parts of the game of volleyball. It requires the hitter timing his/her jump and arm swing with the ball flying through the air. Jump serving is just spiking from the end line but the server tosses the set (*Foundation, nd*). Which means smash is also known as hitting or attacking. This is one of the most interesting and challenging parts of volleyball game. Smash takes the hitter to jump and his arm swinging with the ball flying through the air. Direct serve only spikes from finish line but server throws set.

In the volleyball game to get points or to get a win, various ways or techniques can be done, including the smash technique (Anggara & Yudi, 2019:1334). With a good smash technique, the opponent's defense can be turned off and victory can be achieved (Sovenski, 2018). Smash Volleyball is a hard hit that is aimed at the opponent's square and serves as an attack (Rahadian, 2018:37).

Normal Smash

A player who wants to do a normal smash should pay attention to the process of implementing the smash. Winarno in Mustaqim the process of doing a smash can be divided into four stages: when taking a prefix, when taking a repulsion, when making a shot and when making a landing. (Mustaqim, 2020).

Normal Smash/open smash, which is a smash done after taking the prefix when the ball leaves the feeder's hand, the ball height from the feeder reaches ± 3 m from the net, the ball is hit when the ball is about 20 cm–50 cm apart (Rahman et al., 2014:9).

This smash process is carried out from the initial attitude, the execution movement and the follow-up movement are the same as the general smash implementation process, but there are special characteristics in normal smashes, namely:

- a. Toss the ball or bait high enough to reach 3 m and above and the distance of the ball being fed ranges from 20 to 50
- b. The point of the ball being fed is around the middle area between the feeder and the smasher as measured from the smasher's projection line to the net
- c. The first step starts after leaving the hand of the feeder with a concentrated eye on the ball
- d. Reaching and hitting the ball as high as it is above the net

Semi Smash

The implementation of the semi smash movement is the same as the normal smash, the only difference lies in the height of the bait and the timing of taking the first step, the beginning of the forward step starts slowly since the ball starts towards the feeder, and once the ball is fed by the feeder, the smasher immediately jumps and hits the ball as quickly as possible. fast over the net, the height of the bait is approximately one meter above the net.

Rahman says "*Semi Smash*, namely the smash movement that is done after the ball is released from the feeder's hand. The initial attitude of the execution motion and the follow-up motion is the same as the normal smash, the height of the ball being fed is ± 1 m from the net(Rahman et al., 2014:9).

Semi Walk in Smash

Basically this semi walk in smash is the same as the semi, the difference is only in the direction of the ball. In the semi-smash, the prefix is opposite to the direction of the bait, while in this road smash, the prefix is in the same direction as the bait, which means that the initial position of the smasher is beside or slightly behind the feeder. As soon as he sees the ball passing to the feeder, the batsman makes the start as quickly as possible, with long strides. Timing jumps before the ball is passed with a distance of one arm's reach from the ball to be fed. The bat floats with

his hand ready to hit, the feeder presents the ball right in front of the bat's hand. This bait technique requires a ball height of 50cm to 1m from the top edge of the net(Rahman et al., 2014:9).

Smash Push

The initial attitude to take the smasher is to immediately put yourself out of the field, approach the net pole and face the feeder. As soon as the ball comes towards the feeder, the smasher immediately moves to meet the ball and runs parallel to the net. *push smash*, namely the smash movement that is done after starting out the side line, after that the player steps up to meet the ball, the direction of the ball is usually not too high from the net (Rahman et al., 2014:9).

Smash Pull

The starting stance is the same as the other types of smashes, the only difference is that the pressure on the normal stance is more and takes a closer distance on the feeder. *Pool Straight Smash*, initial attitude, execution movement and the follow-up motion is almost the same as the quick smash pool, the difference only lies in the direction of the bait given by the feeder. Parabolic ball between 0.5m to 1.5m from the top edge of the net(Rahman et al., 2014:9).

METHOD

This research was conducted on three volleyball extracurricular coaches. This research was conducted using the research &

development method. Research & development is research to produce certain products and test their effectiveness (Sugiyono, 2011). The research method used in the "LS" smash training model research for junior high school age beginners is the ADDIE development model with the following steps: (1) Analysis, at this stage the researchers conducted preliminary research, literature review, field observations, analysis of development needs and initial observations about smash training for volleyball beginners, (2) *Design* At this stage include; designing the initial developed product; determine the media tools and infrastructure needed in research; determine the stage in the initial field test; provide job descriptions to those who assist the research. (3) Development, at this stage everything that is needed or that will support the training process must all be prepared, (4) Implementation, at this stage everything that has been developed is in accordance with its role or function so that it can be implemented. After the product is ready, it can be tested through a large group and then evaluated and revised. Then the trial can be carried out in large groups and then re-evaluated and revised so as to produce a final product that is ready to be disseminated, (5) Evaluation, the evaluation stage can be carried out at each of the four stages above which is called formative evaluation, because

the goal is for revision needs. For example, at the design stage we need an expert review to provide input on the design we are making.

Thus, research on model development can be concluded that research that produces a product with a better level of effectiveness begins with analysis, design, development, implementation and evaluation with the orientation of the results of development on the model.

RESULTS AND DISCUSSION

Overall, there are 3 general objectives that will be revealed in the preliminary study or needs analysis, namely: (1) providing a variety of training models. (2) provide a reference for the coach. (3) efforts to improve extracurricular volleyball smash practice at Junior High School. The needs analysis was carried out by interviewing the trainers. The results of the needs analysis are explained as follows:

Table 2.

Volleyball Needs Analysis Data

Question points	Finding
What materials do coaches usually give to athletes during volleyball extracurricular activities?	Training materials for passing, smash, service and other game modifications
Are athletes passionate about volleyball practice?	He's excited
Is there a volleyball smash practice	There are some

model?	
Is intense volleyball smash material given in every volleyball extracurricular exercise?	Not always
What efforts did the coach make to improve volleyball smash practice?	Doing smash practice in every meeting and making variations of smash practice
Does the coach need a volleyball smash practice model?	Really need, because of the limitations of the model or the variety of exercises due to lack of knowledge sharing.

The results of the analysis in table 2. suggest several important points that are key in developing the volleyball smash model at Junior High School 12 Tambun extracurricular. Among them are 1) the lack of smash practice by the coach, 2) the coach stated that the smash variation model used in volleyball extracurricular training at Junior High School 12 Tambun is limited.

Design (Design)

The first step in this research is to develop a model product for volleyball smash training "LS" for junior high school age beginners Junior High School. Researchers compiled 23 models of volleyball smash training "LS". In this initial draft there has not been an expert/expert test, the total initial design was designed by the researcher after conducting a needs analysis.

Development (Development)

The smash model that has been designed by the researcher is tested by

experts, this is useful for determining the feasibility of the volleyball smash model product. Validation of the model product was carried out by three experts in the field of volleyball who have been involved for at least 5 years in the sport of volleyball.

Based on the data and responses that were collected from volleyball experts in stage I, there were several revisions to the model variations of the products that had been made. This is done to further optimize the benefits of development for users. The following describes the revision of the experts.

Table 3.

The results of the revision of the futsal expert stage I

Model name	Expert 1	Expert 2	Expert 3	Percentage
Model 1	1	1	1	66.67%
Model 2	1	1	1	66.67%
Model 3	1	1	1	100%
Model 4	1	1	1	100%
Model 5	1	0	1	66.67%
Model 6	1	1	1	100%
Model 7	0	1	1	66.67%
Model 8	1	1	1	100%
Model 9	1	1	1	66.67%
Model 10	1	1	1	100%
Model 11	1	1	1	66.67%
Model 12	1	1	0	66.67%
Model 13	1	1	1	66.67%
Model 14	1	1	1	100%
Model 15	1	1	1	100%
Model 16	1	1	1	66.67%
Model 17	1	1	1	100%
Model 18	1	1	1	100%
Model 19	1	1	1	66.67%
Model 20	1	0	1	66.67%
Model 21	1	1	1	66.67%
Model 22	1	1	1	100%
Model 23	1	1	1	100%
Average Percentage				82.61%

The results of the first stage expert test in table 3, there are three experts who provide an evaluation of the volleyball smash model product. Based on the data presented above, the average percentage of expert validation is 82.61%. This result states that the product of the VALID Junior High School extracurricular smash volleyball practice model and made some improvements to the volleyball smash model product.

Meanwhile, the following suggestions and inputs from volleyball game experts are presented regarding the developed model:

1. Subah products are good and very varied.
2. Please sort the models from the easiest level of difficulty to the most difficult because there is still an introduction to the ball in the middle.

The results of the expert/expert input are then adjusted or improved from the order of the model arrangement, which is sorted from the easiest to the hardest.

Expert Validation Phase II

The second stage of the test was carried out to revise from stage I. The results of the evaluation and improvement in stage I were accommodated and repaired in order to achieve the desired product perfection. The results of the second stage of the test are attached in table 4 below:

Table 4.
 Stage II volleyball expert assessment results

Model name	Expert 1	Expert 2ar	Expert 3 Pak	Percentage
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Model 1	1	1	1	100%
Model 2	1	1	1	100%
Model 3	1	1	1	100%
Model 4	1	1	1	100%
Model 5	1	1	1	100%
Model 6	1	1	1	100%
Model 7	0	1	1	66.67%
Model 8	1	1	1	100%
Model 9	1	1	1	100%
Model 10	1	1	1	100%
Model 11	1	0	1	66.67%
Model 12	1	1	1	100%
Model 13	1	1	1	100%
Model 14	1	1	1	100%
Model 15	1	1	1	100%
Model 16	1	1	1	100%
Model 17	1	1	1	100%
Model 18	1	1	1	100%
Model 19	1	1	1	100%
Model 20	1	1	1	100%
Model 21	1	1	1	100%
Model 22	1	1	1	100%
Model 23	1	1	1	100%
Average Percentage				97.10%

The results of the second stage expert test in table 4, there are three experts who provide an evaluation of the volleyball smash model product. Based on the validation data for phase II presented above, the average percentage of expert validation is 97.10%.

Implementation

Implementation is carried out by researchers by asking the opinion of the teacher as a user of the model that has been developed. This is done because it is not possible to carry out direct field tests due to the Covid-19 pandemic. This application is carried out by distributing model products that have been tested by experts to extracurricular teachers/trainers in three junior high schools, after which they are given in the form of a

questionnaire/questionnaire about responses to the model with three indicators contained therein. The results of the implementation and responses of extracurricular teachers/coaches are presented in table 5 below:

Table 5.
 Volleyball extracurricular teacher/coache implementation and responses

Model	User 1			User 2			User 3			%
	a	b	c	a	b	c	a	b	c	
1	4	4	4	4	4	4	4	4	3	97.2
2	4	4	4	4	4	4	3	4	4	97.2
3	4	4	4	4	3	3	4	3	3	88.9
4	4	3	4	4	4	4	4	4	4	97.2
5	4	4	4	4	4	3	3	4	4	94.4
6	4	4	4	3	3	3	4	3	3	86.1
7	4	4	3	4	4	3	4	4	4	94.4
8	4	3	4	4	4	4	3	4	4	94.4
9	4	4	4	4	4	3	4	3	4	94.4
10	3	4	4	3	3	4	4	4	3	88.9
11	4	4	4	4	4	4	3	3	4	94.4
12	4	4	3	4	4	3	4	4	3	91.7
13	4	4	4	4	4	4	4	4	4	100
14	4	4	4	3	3	4	3	3	4	88.9
15	4	4	3	4	4	3	4	4	3	91.7
16	4	4	4	4	3	4	4	4	4	97.2
17	4	3	4	3	4	4	3	3	4	88.9
18	4	4	4	4	4	3	4	4	3	94.4
19	4	4	4	4	3	4	3	4	4	94.4
20	4	4	4	4	4	4	4	3	3	94.4
21	4	4	4	4	4	3	3	4	4	94.4
22	4	4	4	4	4	4	4	4	4	100
23	4	4	4	4	4	4	4	4	4	100
Average Percentage										94.1%

Information:

- a = security
- b = benefit
- c = usefulness

The results of the responses from teachers as users of this model are very enthusiastic in responding to the high responses to products that have been compiled and validated by experts. The data

collected by the researcher in this percentage states that the overall average percentage of teacher/trainer responses is 94.08%. The high response of teachers/coaches encourages researchers to publish in national journals so that this research can be consumed by the general public for volleyball sports activists, especially in the application of volleyball smash.

Evaluation

Evaluation is the final stage of the ADDIE development model. Because in this study only using expert tests and user responses, namely teachers/trainers, the evaluation referred to here is the evaluation of validation activities and user responses. The results of the evaluation obtained suggestions from experts and responses from teachers/trainers during the expert test and observation or needs analysis carried out and at the last stage, namely on user responses, so that from this evaluation stage a final revision was carried out.

Discussion

Designing a variation model of volleyball smash practice for junior high school starts from a needs c analysis conducted by researchers in several junior high schools in Bekasi. According to Waldopo, (2011) Needs are the gap between the current state and the state it should be. This initial analysis had several obstacles, including:

1. The process of designing the volleyball smash variation model that will be developed takes a long time, taking into account various things, so that the training model is completed in quite a long time.
2. Consultation time with experts about the initial grand design was time-consuming, until the researchers compiled the entire initial draft of the volleyball smash model.

Based on the initial product that has been made, an expert test of volleyball material is carried out, then a revision is made based on the assessment and comments of the experts, at this stage two improvements or expert tests are carried out in order to arrive at the perfection of the product. The product, which has been revised in the second phase, is continued at the implementation phase, but in this implementation phase during the COVID-19 pandemic, so it is replaced with user feedback, namely volleyball extracurricular coaches/teachers. In this response, three indicators are made, namely the principles of usefulness, usability and safety.

In this study, maximum efforts have been made according to the ability of the author, but in this research there are still some limitations that must be acknowledged and put forward as consideration in generalizing the results of the research

achieved. These limitations include the following:

1. This product can only be tested by experts/experts and responses from users, namely trainers/teachers as trainers in extracurricular Junior High School in Bekasi.
2. The product does not yet have the ability to analyze the results of the volleyball smash test
3. Due to limited time and funds as well as during the COVID-19 pandemic, there is no direct treatment for students as research subjects, so it will affect the level of effectiveness of the model in its application.

CONCLUSION

Based on the data that has been obtained, from the results of expert/expert tests and implementation to teachers/coaches, it can be concluded that the "LS" volleyball smash training model for junior high school age beginners can be developed and applied in volleyball smash skills training and ball smash training models. volleyball "LS" is suitable for use for junior high school age.

In this study, several recommendations were put forward by the researchers in connection with the limited research of the "LS" volleyball smash training model for junior high school age beginners including:

1. For further researchers, it is hoped that they will conduct an in-depth and mature needs analysis study.
2. The "LS" volleyball smash training model for junior high school age beginners can be used by coaches or teachers in schools where in the use of this product it is necessary to consider infrastructure, situations and conditions in the field.
3. Multiplying training model items that are designed to be more creative and innovative so that they can be references and make athletes have a lot of variety in training.
4. Before this product is distributed, it is better if the "LS" volleyball smash training model for junior high school age beginners is re-tested to athletes/students to be more effective and efficient.
5. Conduct field trials in small and large quantities to ensure product effectiveness.
6. It is hoped that the "LS" volleyball smash practice model for junior high school age beginners can be disseminated to all coaches and teachers in Indonesia to be used as a reference in practice.

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