



Volleyball Serving Ability Training Model for Adolescents in Jayapura City

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Abstract

The phenomenon that is still found in junior high schools in the city of Jayapura is the lack of literature on basic volleyball movement skill training models. So a structured training model is needed in learning. This research is a type of model development research or what is often known as Research and Development (R&D). The characteristic of this research is that it focuses on service learning and focuses on the basic motion components of the service itself. The effectiveness test in this research uses the t-test, which measures service skills before and after being given this service learning model. The approach used is a quantitative approach, namely measuring volleyball service skills with a research plan in the form of the one group pretest-posttest design. The data obtained is based on the average of the 947 pretest scores. This is the score obtained before being given training using the model created. After the initial test was carried out, the application of the model was carried out using a training program that was created so that after being tested again, its serviceability obtained a post-test score of 1331. Based on the results of field trials and discussion of research results, several conclusions were obtained, namely: 1. There are 18 (Eighteen) Volleyball Serving Skill Training Models for Beginner Athletes of Middle School Age. 2. The developed Volleyball Serving Ability Training Model can improve volleyball Serving ability efficiently and effectively.



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INTRODUCTION

Papua Province is a region of Indonesia which is located in the easternmost part (Hasta Budiratna, 2020; Purwanto & Saparia, 2024). Region that has a wealth of natural resources and a wealth of human resources. The natural resources in Papua are naturally managed by the people and residents there. Existing resources are utilized and explored for the purposes or needs of the community. Like natural resources, human resources also need to be utilized and explored in an effort to improve the quality and ability of humans so they can compete, survive and progress.

Papua Province is currently experiencing provincial expansion which aims to facilitate and equalize regional development and growth. This effort was made so that the expanded region could focus more on advancing the region (Sumarlis, 2018). One of the focuses that the expanded areas are concentrating on is education. Education is a basic component of the quality of human resources. Education makes human resources competent in their life skills.

In an effort to utilize and explore human resources, education is present in a two-way environment. There are stimuli and responses in the educational environment. In Indonesia, education is divided into two, namely formal and non-formal (Haerullah, 2020). School education is part of formal education. Structured formal education has a scientific sequence. Proof of the phenomenon is based on research and literature review so that it comprehensively becomes a strong basis for humans.

School education has a lot of knowledge that humans can learn. One of them is physical education, physical education is something that cannot be separated from education. Learning and teaching activities through physical activity so as to increase the physical fitness of the participants is the essence of physical education in schools (A M Bandi, 2011). Physical education in schools is vital in its implementation. Producing output that directly provides change makes physical

education part of the curriculum at every level. Through physical education, you can improve your health, fitness, emotional stability, reasoning and critical thinking abilities.

Maturing in terms of growth and movement means that teenage students need movement exploration to support their growth and development. Continuously trained movement reflexes can make teenage children better prepared when entering adulthood (Sulistianingsih et al., 2023). Volleyball serving is a basic skill that requires a lot of practice to mature young children. In professional sports, a serve is the start of an attack. Efforts to attack must have mature skills so that the service ability is adequate.

Teenagers have various problems in learning basic volleyball movement skills. The phenomenon that is still found in junior high schools in the city of Jayapura is the lack of literature on basic volleyball movement skill training models. So a structured training model is needed in learning. In the basic movement of volleyball, namely serving, approximately 80% of students have difficulty serving. This appears to be an error at the start and the implementation stages are still not quite right. So that some of the service balls that are hit do not cross the net, the direction of the ball hit is not directed and lack of confidence when serving means that students' skill scores are still lacking.

The volleyball service skills training model created by researchers is a training model that combines circuit training and situational training based on local equipment modifications. The circuit training created is part of an effort to make students confident in the environment and field area. This habituation needs to be done so that students get used to it and don't experience problems when servicing from any area or region. Situational training is providing a training description that represents the situation when dealing with an opponent. This condition really needs to be done in order to improve

and create knowledge or understanding of playing which can be directly confirmed by the teacher or coach.

The Papua region, namely the city of Jayapura, still lacks training equipment that can support learning activities and practice basic volleyball skills. So researchers will try and maximize the use of tools available around the training and learning areas. Based on the above phenomena and the latest information that researchers have obtained, the researchers are trying to carry out research with the title "Volleyball Service Skill Training Model for Adolescents in Jayapura City".

It is hoped that future research will provide theoretical and practical benefits.

1. In theory, research will become a treasure of knowledge for teachers and trainers in the classroom and in the field so that efforts to improve teacher professionalism are in line with sustainable efforts.
2. Practically, for teachers and coaches it can be used as an evaluation to improve student performance or learning outcomes related to volleyball abilities

METHODS

This research is a type of model development research or what is often known as R&D (Research and Development). Create and produce products that can be utilized by the community (Purwanto & Saparia, 2024). The resulting product is the latest, improved and perfected version of the previous product. In producing products, we use an approach and involve a scientific basis. The model development that researchers use is ADDIE (analysis, design, development, implementation, evaluation). The scientific stage in this research tends to be more practical but still focuses on the research objectives. The place where this research was carried out included junior high schools in the city of Jayapura. The characteristic of this research is that it focuses on service learning and focuses on the basic motion components of the service itself. The general flow of this research is described as follows:



Picture 1. Design ADDIE

The effectiveness test in this research used the t-test, which measures service skills before and after being given this service learning model using SPSS. The approach used is a quantitative approach, namely measuring volleyball serving skills with a research plan in the form of a one group pretest-posttest design.

Table 1. Desain *pretest posttest*

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

Sampling Procedures

The population is the totality of the objects to be studied (Rio Wakhid, 2023). In this study, the research population was teenagers who practiced volleyball in the city of Jayapura. Researchers used a population of 40 teenage students at YPPK Santo Paulus Middle School and Mts Darul Ma'arif Jayapura. The population in this study was used during large-scale product trials.

To test products on a small scale, researchers used 15 students. some of which were taken from each school. The samples used in small-scale trials are intended to look for weaknesses and deficiencies in the resulting model before it is later corrected and refined to be carried out on a large scale.

RESULT

As a result of the Volleyball Serving Ability Training Model, several training movements were developed which resolved several problems that had previously been observed. The analysis used in this research is ADDIE (Analysis, Design, Development, Implementation, Evaluation). The following are the findings obtained through the above analysis.

a. Analysis

Analysis is a description of problem findings when conducting observations in the field. This observation was carried out through observations carried out for one month while learning volleyball material, here are some of the findings that were found:

1. Students have never done a variety of volleyball service exercises.
2. Students feel bored with the service training given.
3. Students feel discouraged with their service ability because many of the balls they hit do not go over the net and cross into the opponent's area.
4. The exercises taught do not start from stage to stage according to the stages of attitude when learning or practicing volleyball serves.

b. Design

The problems that occur above are a sign of the needs that students need when practicing service at school. In creating exercise designs, researchers pay attention to very basic aspects, namely exercises starting from basic stages to high levels. In serving itself, there are several stages that need to be paid attention to, namely the start, stroke and end. From these stages, the researcher designed exercise movements that focused on the movements at each stage. Thus, several forms of exercise movements were created. To make it easier for teachers and trainers themselves to implement these movements, researchers labeled each movement with an alphabetical name. The following are the results of the service training movements created.

c. Development

In the development stage, after creating 18 (eighteen movements), the researcher created a learning plan or training plan. The goal is to make a written plan of the objectives of each meeting. The meeting itself is adjusted to the material schedule in a lesson, namely four meetings. Apart from that, to measure the achievement of the expected goals, the researchers developed an instrument that will be used to measure students' volleyball serving abilities. This measurement is carried out at the beginning before treatment and after treatment is given. The following is the serviceability test instrument used.

d. Implementation

This stage is the application of the model, in accordance with the development stages above. Learning activities were divided into four meetings, where at each meeting, after the students had practiced, the researcher gave a questionnaire which the students immediately filled out. The aim of distributing this questionnaire is that students can directly assess the training model provided. The following are the results of the feasibility questionnaire for the model in question.

Table 2. Model feasibility results

No	Aspects assessed	grading scale				
		1	2	3	4	5
1	Model A	0	0	0	40	0
2	Model B	0	0	0	40	0
3	Model C	1	2	35	1	1
4	Model D	0	0	0	40	0
5	Model E	0	0	0	40	0
6	Model F	0	0	0	40	0
7	Model G	0	0	0	40	0
8	Model H	0	0	0	40	0
9	Model I	0	0	0	40	0
10	Model J	0	0	0	40	0
11	Model K	0	0	0	40	0
12	Model L	0	0	0	40	0
13	Model M	0	0	0	40	0
14	Model N	0	0	0	40	0
15	Model O	0	0	0	40	0
16	Model P	0	0	0	40	0
17	Model Q	0	0	0	40	0
18	Model R	0	0	0	40	0

The norms from the results of filling out the questionnaire above are as follows :

Table 3. Norm table

Presentase	Klasifikasi	Makna	Skala
0-20%	Not Good	Discarded	1
20,1-40%	Less	Fixed	2
40,1-70%	Good Enough	Used (Conditiona)	3
70,1-90%	Good	Used	4
90,1-100%	Very Good	Used	5

Based on the results of the data above, it can be concluded that of the 40 samples that were researched subjects answered that each model practiced was classified as Good, which means it can be used to train their service skills.

Servis Bola Voli 40 33.28 3.679 .582

a. *Evaluation*

Evaluation is the final stage of the previous process. Researchers got the results from the initial test and final test and then got the following values.

Testee	Pretest	Posttest
1	26	37
2	29	33
3	28	32
4	26	39
5	23	32
6	22	30
7	13	36
8	16	36
9	22	40
10	26	40
11	11	35
12	19	33
13	29	37
14	21	33
15	16	36
16	18	31
17	23	30
18	24	38
19	19	31
20	28	30
21	30	32
22	28	30
23	21	29
24	24	29
25	26	30
26	13	29
27	23	31
28	30	40
29	16	29
30	29	34
31	32	37
32	24	34
33	33	37
34	26	34
35	23	28
36	23	26
37	29	37
38	25	32
39	24	30
40	29	34
Jumlah	947	1331

Table 4. Result *pretest postes*

1. **Average Value.**

Table 5. Average value

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Servis Bola Voli	40	23.68	5.375	.850

From the results of quantitative analysis using SPSS 23, it was found that the average value between before and after being given treatment had increased. The average value before being given treatment was 23.68, while after being given treatment it was 33.28.

2. **Coefficient Correlation**

Table 6. Correlation Coefficient

Correlations			
		Servis Bola Voli	Servis Bola Voli
Servis Bola Voli	Pearson Correlation	1	.222
	Sig. (2-tailed)		.168
	N	40	40
Servis Bola Voli	Pearson Correlation	.222	1
	Sig. (2-tailed)	.168	
	N	40	40

Based on the results of the exercise correlation coefficient test display before and after being given training treatment, a Sig (2 – tailed) value of 0.168 was obtained. This value can be compared with the p-value of 0.05, which means $0.168 > 0.05$, so there is a relationship between before being given treatment and after being given treatment.

3. **Significance of the Difference**

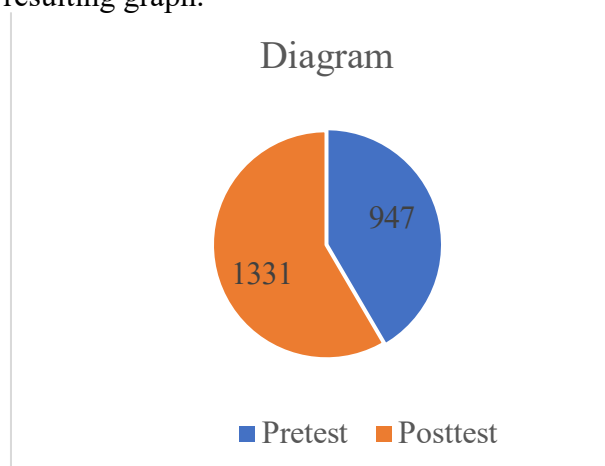
Table 7. Significant Difference

One-Sample Test	
	Test Value = 0
	95% Confidence Interval of the Difference
Sig.	

	t	d	(2- taile d) f	Mean Differ ence	Lo wer	Uppe r
Servis	27.	3	.00	23.67	21.	25.39
Bola Voli	857	9	0	5	96	
Servis						
Bola Voli						

In the significant difference test using the T test assisted by SPSS 23, tcount = 27,857, df = 39 and p-value = 0.00 < 0.05. So, there is a significant difference before and after being given training treatment on the service model of volleyball ability.

Volleyball service skill training uses a training model that is designed to effectively improve service ability in junior high school age athletes. This is shown by the quantitative results of the data that has been taken. The following is a display of the resulting graph.



Picture 2. Pretest and Posttest Pie Chart

DISCUSSION

From the comparison test carried out, the aim was to find out whether the service ability training model carried out was effective in improving the service ability of beginner junior high school age athletes. The data obtained is based on the average of the 947 pretest scores. This is the score obtained before being given training using the model created. After the initial test was carried out, the application of the model was carried out using a training program that was created so that after being tested again the service capability obtained a post-test score of

1331. By looking at these results it can be concluded that there has been an increase in quantity. This is in accordance with the theory put forward by Zarwan 2019 that automatically, movements carried out repeatedly by the body will experience adjustments to the movements carried out (Zarwan Hardiansyah, 2019).

In terms of quality, many students are happy with this kind of training model. Apart from that, they are also comfortable with the existing model because they can also practice it at home. With so many training models, students don't feel bored when practicing.

General, no significant obstacles were found when directly practicing the movements of the training model created. However, based on several inputs from several students, teachers and researcher observations. Researchers noted several things that could be of note.

1. There is a need to group students who have the ability to quickly accept practice material and those who do not. Students who are a little slower need extra time and extra classes to focus on improving their movements.
2. The model to be put into practice needs to be mastered in theory before students practice it in the field. Students need literacy that reveals the profile of the practice model.
3. Trials are needed with samples in different places that are geographically different from urban areas.

CONCLUSION

Based on the results of field trials and discussion of research results, several conclusions were drawn, namely:

1. There are 18 (Eighteen) Volleyball Serving Skill Training Models for Beginner Athletes of Middle School Age.
2. The Volleyball Service Skill Training Model developed can improve volleyball Service ability efficiently and effectively.

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