



## Development Model Training Shooting based on Multiple Unit Offense for Basketball Athletes 16-18 Years of Age Groups

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### **Abstract**

The goal of this research and development is to produce and develop the effectiveness of the model of drills shooting basketball for basketball athletes 16-18 years age group. This research and development uses qualitative and quantitative approaches and uses development research methods Research and Development (R & D) that adopt the theory of Borg W. R and Gall. M. D which uses 10 stages of development. The steps in this development research start from the following: (1) Research and information collecting, (2) Planning, (3) Develop preliminary form of product, (4) Preliminary field testing, (5) Main product revision, (6) Main field testing, (7) Operational product revision, (8) Operational field testing, (9) Final product revision, (10) Dissemination and implementation. This development research resulted in practice model products shooting with practice manuals shooting and practice videos shooting. The results of processing normality test data with Kolmogorov-Smirnov and Shapiro-Wilk obtained the Sig or the p-value of all data for Kolmogorov-Smirnov > 0.05, H0 is accepted or not significant, means the population data is distributed normally. In addition, the results of the t-test value of the post-test experimental group and the control post-test, with the mean (mean) test results of technique shooting the basketball given the based training model multiple unit offense (experimental group) of 103.27 and The standard deviation is 12.556, which means that descriptively the ability of the technique shooting given the based training model multiple unit offense is higher and more developed than the based training model multiple unit offense. In addition, the average N-Gain Score for the experimental class is 158.71%, this value is included in the "effective" category, with a minimum value of 20.69% and a maximum value of 750.00%. While the average N-Gain Score for the control class is 38.76%, this value is included in the "ineffective" category, with a minimum value of 5.00% and a maximum value of 200.00%. Thus it can be concluded that the use of techniques for shooting basketball athletes in the 16-18 year age group based on multiple unit offense is effective in improving the skills of techniques shooting.

**Keywords:** *Training Model; Shooting; Multiple Unit Offense; Basketball*

## Introduction

Basketball game is a game played by two teams, each team consisting of five players. The goal of the basketball game is to produce as many numbers as possible by inserting the ball into the opponent's ring and preventing or blocking the opponent's game from scoring. Besides is a team or team game, basketball game also requires *good skills* individual from each player. The basic technical skills of the game of basketball themselves, among the others, are the most difficult in doing technique skills *shooting*. According to (Umut Canlı and Çalık Veli Koçak, 2018), "*Among all the physical skills utilized in the game, the most difficult to develop and also the most important one is the shooting ability*". *Shooting* is also the most important skill in basketball games. Athletes who have techniques *shooting* good must be able to master all areas, from the closest distance to the farthest distance. This is what will always hone the ability of a *shooter* to practice shooting techniques. In addition, getting the ball into the basket is the essence of game strategy. One of the strategies for playing basketball is *unit offense*. (Christos Marmarinos et. Al, 2016) said, "*Team offense in basketball games consists of a set of offensive actions carried out with the cooperation of two or more players*". Thus the technique *offense unit* indispensable a team to solve the *defense* (defense) of the opponent.

The results of observations by researchers in the field during training, video review, and watching live matches, the researcher described that the problems that generally affect techniques *shooting* and strategies are *unit offense* divided into two objects, first from the coach and the second from the players or athletes themselves. The coaches include: (1) Less innovative abilities in applying methods of basketball attack patterns and training progress *shooting*; (2) training program *offense* Less effective; and (3) Inadequate use of basketball court facilities and limited facilities. Meanwhile, athletes include: (1) Physical, athletes who are physically inadequate will affect the athlete's concentration in *shooting*; (2) Techniques, basic techniques (*fundamentals*) of *shooting shooting* that have not been mastered properly will affect accuracy and accuracy *shooting*, (3) improper strategies in deciding *timing* in techniques *shooting*, when to *shoot*, and *shooting* what to do , so as not to fail in doing so, (4) Psychologically or mentally, pressure from opponents and *supporters* will affect the mental condition of athletes in executing *shooting* during the match.

This problem is very important to teach each player about techniques *shooting* and *unit offense* during training, this is so that an athlete knows the goals in basketball and always competes both during practice and in matches, besides that the athlete will get a percentage *shooting* good. In the technique *shooting* itself, there are various principles regarding the components of success in *shooting*, namely: (1) *Establishing a solid base*; (2) *Moving to shooting position*; (3) *Allowing the shooting hand to do the work*; (4) *Holding the follow-through* (Lee H. Rose, 2013). Apart from these four principles, there are theories in the fundamentals of techniques *shooting*, including: (1) BEEF (*Balance, Eyes, Elbow, Follow Through*); (2) ROBOT (*Range, Open, Balance, One Count, Teammate*); and (3) BTSBRF (*Balance, Target, Shooting Hand, Balance Hand, Release, Follow Through*) (Danny Kosasih, 2010).

Based on the explanation above, there is a need for research using training model *shooting* based *multiple unit offense* for basketball athletes age group 16-18 years. In addition, this study was adjusted to the concept and limitations of the researcher regarding the desire to develop training models *shooting* basketball which are considered to have several weaknesses in the implementation of basketball practice. So it is necessary to develop a basketball training model. As it is, it can be concluded that the series of movements *shooting* starts from the preparation phase, the implementation phase, to the phase *follow-through*. As for level of success in *shooting* According to Iman Sulaiman, this is, "There are eight guidelines that can be used in correcting someone whether the basic technique of shooting is good or not". (Iman Sulaiman, 2015). The 8 (eight) components include: (1) Leg position; (2) Body position; (3) Ball hold; (4) Gaze (focus) - straight towards the ring; (5) Release The *ball*; (6) *Snap*; (7) Ball direction; and (8) *Follow Through*.

The basic technique of playing basketball itself, there are several techniques that must be learned by athletes to fulfill the movement in *the offense unit*. The techniques that must be mastered include: *dribbling; passing; moving without the ball* (movement without the ball) such as *cutting (V-cut, L-cut, back cut, rear cut, front cut, backdoor cut, slashing); settings* such as, *Screen (pick & roll, give & go, pick & pop out, down screen, back screen, cross screen, curl, double screen, multiple screen, screen to screen); kick out; drive penetrate and motion / pattern*. technique *Offense* consists of several units, starting with: (a) *fundamental offense of 1* (one) person; (b) then *the offense unit* which is introduced from the 2 (two) person unit, the 3 (three) person unit, to the 4 (four) person unit, and (c) when entering into 5 (five) people becomes the *set offense*. (Danny Kosasih, 2010).

The practice model product development *shooting* has the following novelties: (1) This practice model *shooting* is made more competitive as in real match situations by emphasizing the percentage of techniques *shooting*, the number of opportunities *shooting* and the number of *shots* that enter. (2) Mastery of technique *shooting* the correction deciding when is the right time (*timing*) which must be used at the end of the attack (*offense*), where in the match there is guarding from opposing players, and must decide *shooting (lay up shoot, set and jump shoot, three point shoot)* what will be done from various areas, (3) Understanding and knowledge of various techniques of attacking patterns (*offense*) and reading the *defense* opponent's, (4) A series of training models are *shooting* arranged systematically from the phase *warming up*, the core phase 1, the core phase 2, and the phase *cooling down*, (5) The series of exercises *shooting* arranged systematically from easy to difficult.

## Methodology

The research method that the authors chose to use research development methods *Research & Development*. The technique of taking the subject in this study is *purposive sampling* or the sample obtained is male or female athletes in clubs and regional teams, especially in the Cirebon region who according to the assessment have the best abilities. The subject of research in the development of the exercises *shooting* model-based *multiple units offense* for basketball athletes 16-18 years age group is comprised of the following:

**Table 1** Subject Research

Athlete Basketball KU- 16-18 years	Small Group Trial	Large Group Trials	Effectiveness Test	
			Control Group	Experiment Group
Man	15	35	15	15
Women	15	40	15	15
Total	30	75	30	30

## Research Results and Discussion

The results of the test data capabilities technique *shooting* basketball 16-18 years age group, then the normality test was carried out with *Kolmogorov-Smirnov* and *Shapiro-Wilk* using SPSS. Meanwhile, before the t-test is carried out, the normality test is carried out as follows.

**Table 2 .Test of Normality**

Tests of Normality						
Basketball Shooting Technique Ability Test Results	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pretest Experiment	.118	30	.200*	.967	30	.452
Experimental Posttest	.096	30	.200*	.971	30	.556
Pretest Control	.120	30	.200*	.936	30	.072
Posttest Control	.149	30	.087	.939	30	.083
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

The output above, the Sig or p-value for all data is obtained Kolmogorov-Smirnov > 0.05, H0 is accepted or not significant. Thus, the data is population the result of a technique ability test for the shooting of the basketball 16-18 year age group normally distributed. Likewise, the results of the analysis also show that the Shapiro-Wilk value is Sig or p-value > 0.05, which means that the population data on the test results of technique skills shooting basketball in the 16-18 year age group are normally distributed. The next step will be the t-test. The results of the t-test scores for the post-test experimental group and the control post-test are as follows.

**Table 3. Group Statistics**

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Test Results Basketball Shooting Technique Ability	Posttest Eksperiment	30	103.2667	12.55590	2.29238
	Posttest Control	30	87.3667	11.30604	2.06419

The output above, the average (mean) results of technique ability test shooting the basketball given the based training model are multiple unit offense 103.27 and the standard deviation is 12.556. Likewise, the results of the technique ability test shooting basketball that were not given based on the training model were multiple unit offense 87.37 and a standard deviation of 11.306. This means that descriptively the technique ability of shooting basketball athletes in the age group of 16-18 years given based training model multiple unit offense is higher and more developed than not given based training model multiple unit offense.

**Table 4. Independent Samples Test**

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Shooting Ability Test Results	Equal variances assumed	.269	.606	5.154	58	.000	15.90000	3.08479	9.72513	22.07487
	Equal variances not assumed			5.154	57.374	.000	15.90000	3.08479	9.72370	22.07630

As the output above, the  $t$  value = 5.154 and the Sig. (2-tailed) or  $p$ -value = 0.000 < 0.05 or  $H_0$  is rejected. Thus there is a significant difference between the results of the test for the technique shooting of basketball athletes in the 16-18 years age group after using the based training method multiple unit offense and the basketball athletes of the 16-18 year group who were not given the based training method multiple unit offense.

**Table 5.** Calculation Results of the N-Gain Score Test

Descriptives					
	Class		Statistic	Std. Error	
N Gain Score (%)	Experiment	Mean		158.7103	27.35971
		95% Confidence Interval for Mean	Lower Bound	102.7534	
			Upper Bound	214.6672	
		5% Trimmed Mean		139.7760	
		Median		123.5385	
		Variance		22456.612	
		Std. Deviation		149.85530	
		Minimum		20.69	
		Maximum		750.00	
		Range		729.31	
		Interquartile Range		170.86	
		Skewness		2.350	.427
		Kurtosis		7.518	.833
	Control	Mean		38.7646	10.36603
		95% Confidence Interval for Mean	Lower Bound	17.5637	
			Upper Bound	59.9655	
		5% Trimmed Mean		31.8959	
		Median		11.2500	
		Variance		3223.635	
		Std. Deviation		56.77706	
		Minimum		5.00	
		Maximum		200.00	
		Range		195.00	
Interquartile Range		26.67			
Skewness		2.022	.427		
Kurtosis		2.828	.833		

As the output above, shows that the average value of the N-Gain Score for the experimental class is 158.71%, this value is included in the "effective" category, with a value minimum 20.69% and maximum value 750.00%. Meanwhile, the average N-Gain Score for the control class is 38.76%, this value is included in the "ineffective" category, with a minimum value of 5.00% and a maximum value of 200.00%. Thus it can be concluded that the use of techniques for shooting basketball athletes in the 16-18 year age group based on multiple unit offense is effective in improving the skills of techniques shooting.

## Conclusion

Based on the results of needs analysis, expert judgment, initial product trials, field trials, effectiveness implementation and discussion of the results of development research on the development of training models shooting based multiple unit offense for basketball athletes aged 16-18 years, it can be concluded that:

1. This development product has resulted in development products in the form of models training model shooting based Multiple unit offense for basketball athletes aged 16-18 years.
2. Product development model of practice shooting based multiple units offense, this is very effective to improve the ability of shooting the basketball athletes 16-18 years age group.

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