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The development of Cutting Movement-Based Basketball Medium Shooting skill practice model in 15-18 year age group male players

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Abstract

The objective of research was to implement and to find out the result of need analysis, to develop early product (prototype) by implementing and finding out the result of expert and field tests, and to implement product effectiveness test in order to find out the result of cutting movement-based medium shoot skill practice model in 15-18 year age group player. The method employed in this study was “research and development” one. Borg and Gall said that there are 3 (three) main procedures in research and development: firstly, need analysis; secondly product development, and thirdly, product effectiveness test stages. Techniques of collecting data employed in this study were interview, questionnaire, and basketball shooting test.

From the result of research conducted through interviewing the basketball coach in Karanganyar Regency, it can be seen that the basketball medium shoot skill level of 15-18 year age players still tends to be low and there has been no specific guidance concerning the cutting movement-based basketball medium shoot practice form in basketball club. In the second stage, the product development was divided into two: product development and trial. The product developing stage was conducted using expert test, from which it can be found the result of cutting movement-based basketball medium shoot practice model development product with feasibility score of 88.04% belonging to valid category for field test with some notes. Field test stage was divided into two groups: small-scale test with 10 players being the subject and large-scale test with 20 players, with the score of 80.92% and 87.69% for small- and large-scale tests, respectively. It indicates that the development product is feasible with valid criteria for the next stage. The third stage was effectiveness test conducted with 30 players being the subject divided into two groups: experiment (product) and control groups. The total variance score for each of groups based on this test was 56.90 for experiment and 45.58 for control groups. The final conclusion was that experiment group had better result improvement than control group, meaning that the use of cutting movement-based basketball medium shoot practice model development product improved the medium shooting skill of 15-18 year age male group player in Karanganyar Regency more effectively and efficiently.

Keywords: Practice Model, Basketball, Cutting Movement, Medium Shooting

INTRODUCTION

Sport is an attempt of improving human quality focusing on creating character and personality, and high discipline and sportsmanship. Basketball game is an attempt of achieving the objective of sport itself. Basketball game begins to show rapid development today. Many basketball fields can be seen in many cities throughout

this country now. Basketball game becomes one of favorite sport branches to the people, particularly students and college students. Through this basketball sport activity, adolescents benefit much particularly in physical, mental, and social growth. So many basketball competitions are held annually in Karanganyar, including between clubs, schools, and colleges. It includes the official and the non-official ones. The competition held routinely is accompanied with the growth of basket club numbers in Karanganyar Regency. Basketball club is a medium used to build prospect basketball athletes and children who want to do basketball playing activity for recreational purpose and for looking for additional activity beneficial to health. The number of basketball clubs increases and develops over times. Thus, it is expected that the building program will provide good players and achievement. To provide high-quality basketball players, many factors should be taken into account in the building program: talent scouting, infrastructure development, human resource improvement (administrator involved in building, coach, and player), and science and technology application in the practice.

One thing a basketball player needs is skill. It is the factor distinguishing the quality of players. Skill is ability or mastery of something requiring body movement and obtained through practices. Shooting in general and medium shooting in particular is one of skills every player should master. Shooting is an effort taken by each player in a basketball team to get as much as possible score. Shooting is the key to winning a competition. Danny Kosasih (2008:46) stated that "shooting is the most known and favorite basketball basic skill, because every player has instinct to get score". From the result of interview, the author acquired information that most players have not had good accuracy in shooting. In basketball game, to get effective and efficient movement, a good basic technique skill should be mastered. To achieve the good technique skill, a good practice is needed as well. Practice is the primary need to improve physical quality, functional ability of body instrument, and psychical quality of players.

Practice, according to (Bompa, 2009: 4), is a process in which an athlete is prepared for as high as possible ability level. In principle, according to Sukadiyanto (2011: 1), practice is a process of changing into the better one, i.e. to improve physical

quality, functional ability of body instrument, and psychical quality of trainees. By time period, practice is divided into three: short-, medium-, and long-terms. Practice also needs supporting knowledge such as anatomy, biomechanics, physiology, psychology, statistic, and etc. The main component of practice is divided into four: physical, technique, tactic, and mental components. Physical component is the basic one in practice and contributes to helping improve other components. A successful practice cannot be accomplished instantaneously; it needs certain approaches to specify the achievement of objective using a method. Coaches have not had guideline to teach medium shoot well. Coaches give medium shoot practice using their own method only. The conventional practice tends to make the players bored in practicing and the players often find difficulty in understanding how to make mediums hoot correctly. The practice applied should be improved; the practice can be conducted using varying techniques in doing shooting practice. Basketball is a sport done in group, in which a team consists of 5 players competing with each other to put the ball into the opponent's basket or ring to get the point (score). Agus Margono (2011:1) revealed "Basketball was created by America in America in 1891". The objective of individual teams is to put the ball into the opponent's basket as many as possible, thus striking and defending processes occur alternately (Imam Sodikun, 1992 : 98). Shooting or *menembak* in Indonesian language (bahasa) is an attempt of putting the ball into the opponent's basket or ring to get point. Danny Kosasih (2008:46) stated that "shooting is the most known and favorite basketball basic skill, because every player has instinct to get score" Mid range shoot is the time when a player makes shooting in an area outside the key, but inside three point area. And when the shoot enters into the basket, two points will result (Sportslingo.com). Sugiyanto (2001: 12) said "there are three skill movement categories: 1) simple adaptive, 2) integrated adaptive, and 3) complex adaptive skills". The achievement of a skill can be affected by some factors. Those factors, according to Among Ma'mun & Yudha M Saputra (2000: 70), can be mainly divided into three: teaching-learning process, (2) personal, and (3) situational (environmental) factors. As the number of participants playing team sport like football (265 millions), handball (19 millions), and basket (450 millions) increases;

they will most likely do maneuvering movement during playing ("FIBA" 2014; Kunz, 2007; Nauright & Parrish, 2012). The skills existing behind agility includes Change of Direction (CoD), decision making, and perception factors. Cutting movement is the term used is to refer to the movement (CoD). In other words, CoD is when the athlete's legs contact the floor to start the change of direction. Cutting movement also refers specifically to CoD or when the legs contact the floor (ground) (Sheppard & Young, 2006). In basketball game, cutting movement is a movement without ball to make space by means of cutting the element of field. So when the offence area is a cake, the cutting movement is as if a knife's movement to cut the part of cake. Cutting movement can be -cut, V-cut, Back-cut, flash cut. The key to a correct cutting movement is the change of movement direction occurring suddenly, eye keeping focusing on the ball, and the movement keeping controlling the defense player's movement.

Sunarto (Http://e-learning.Po.Unp.Ac.Id,1999) stated that adolescence is an attempt of determining self identity or self actualization. Adolescence and change accompanying are phenomena the teachers should deal with. In his growth and development, human being has needs. Hurlock (1994: 206) said that early adolescent period occurs in about thirteen – sixteen or seventeen year age, and it ends in eighteen-year age. Child aged 15-18 years will experience a development period as the transition from childhood to adulthood. Child is viewed as a source to determine what can be the lesson material. Practice is a form of activity to improve sport skill (ability) using a variety of instruments corresponding to the objective and the need of sport branch (Sukadiyanto, 2011: 5). For example, the organization of practice material in one meeting generally contains: (1) introduction, (2) warming up, (3) core training, (4) supplement, and (5) cooling down. Meanwhile, the definition of training, according to Martin and Nossek (1982), as cited in Sukadiyanto (2011: 6), is the improvement of a planning form to improve sport ability containing material, theory, practice, method, and rule of implementation corresponding to the objective and the goal to be achieved. Shooting practice is used as a way of improving and maintaining the player's shooting skill and ability systematically and measurably. There are many forms of shooting practice to be

used, one of which is cutting. Meanwhile, the cutting forms used for medium or mid range shoot practice are as follows: V-cut shooting, create 2 rows on the threepoint line in rear part of freethrow line, the first player does not hold the ball while the second players and so forth hold the ball. The first player makes v-cut by running straightly to the key area, and then slanting to outside but not crossing the threepoint line. Then the second player holding the ball, passes the ball to the first one who have made v cut; having received the passing, the first player shoot it to the ring directly. Having shot it, the player makes rebound and gives the ball to the player on the line, and goes back to the line. Having passed the ball, the second player makes cutting directly, and so forth. L-Cut Shooting can be accomplished as follows: Makes 2 rows (lines) on the threepoint in the rear part of freethrow line; the first player does not hold ball, while the second player and so forth hold it. The first player does L-cut by running straightly to the key area and then turning 90 degree outside without crossing the threepoint line. Then the second player holding the ball passes the ball to the first player who has done L cut; having received the passing, the first player shoots the ball into the ring. Having shot, the player rebounds and passes the ball to the player on the line and goes back to the line. Having passed the ball, the second player does cutting and so forth directly.

Providing a good and appropriate model is a must to achieve the object of practice itself; therefore the author develops a cutting movement-based medium shoot skill practice model for the 15-18 year age group player in Karanganyar Regency.

METHOD

1. Research Design

Research method is a way used to solve problem using certain technique and tool in order to obtain a result consistent with the objective of research. Research method, according to Sugiyono (2018: 2), is a scientific way to obtain data for certain purpose and use. This research was designed and conducted in basketball club in Karanganyar Regency from December 2018 to June 2019.

2. Population and sample

The population of research was all 15-18 year age group male players in basketball clubs in Karanganyar Regency. The sample of research was selected using purposive sampling (Sugiyono, 2018: 85), consisting of 30 basketball players: 15 in experiment and 15 in control groups.

3. Research Procedure

The research procedure used in this study adopted Borg and Gall's (1983: 775) research and development procedure encompassing firstly, need analysis; secondly, product development with expert's assessment and field test; and thirdly, effectiveness test with experiment using two group pretest and post test design.

4. Research Instrument

The instruments used in this study were firstly need analysis using free interview; secondly, expert test and field test using questionnaire; and thirdly effectiveness test using basketball shooting test battery: (a) *The stationary free throw shooting test (S1P)*, (b) *The dynamic 60-second free throw shooting test (S1P60)*, (c) *The stationary two-point shooting test (S2P)*, (d) *The dynamic 60-second two-point shooting test (S2P60)*.

5. Data Analysis

Technique of analyzing data was divided into two: qualitative and quantitative analyses. Qualitative data was the result of interview of preliminary studies. Quantitative data was the result of prerequisite and significance tests. Prerequisite test was divided into two: normality and homogeneity tests. Significance test was conducted using paired t-test.

RESULT AND DISCUSSION

From the result of research conducted by interviewing basketball coaches in Karanganyar Regency, it can be found that there has been no specific guidance concerning the cutting movement-based basketball medium shoot practice form in basketball club. In the second stage, the product development was divided into two: product development and trial. The product developing stage was conducted using expert test, from which it can be found the result of cutting movement-based basketball medium shoot practice model development product with feasibility score

of 88.04% belonging to valid category for field test with some notes. Field test stage was divided into two groups: small-scale test with 10 players being the subject and large-scale test with 20 players, with the score of 80.92% and 87.69% for small- and large-scale tests, respectively. It indicates that the development product is feasible with valid criteria for the next stage. The third stage was effectiveness test conducted with 30 players being the subject divided into two groups: experiment (product) and control groups. The mean score of shooting test for the 15-18 year age group male players as shown in preliminary data is presented in table below.

No	Group	Test	N	$\bar{x}$
1	Experiment	S1P	15	28.88
2	Control			28.00
3	Experiment	S1P60	15	26.00
4	Control			27.11
5	Experiment	S2P	15	28.44
6	Control			29.11
7	Experiment	S2P60	15	29.11
8	Control			28.88

Table 1. Mean Score of Basketball Shooting Pretest

Next, the group was treated using cutting movement-based basketball medium shooting skill practicing method and conventional practicing method. The result of shooting measurement after the treatment is presented in the table below.

No	Group	Test	N	$\bar{x}$
1	Experiment	S1P	15	41.78
2	Control			42.22
3	Experiment	S1P60	15	41.33
4	Control			44.00
5	Experiment	S2P	15	39.79
6	Control			38.22
7	Experiment	S2P60	15	38.67

8	Control			42.00

Table 2. Mean Score of Basketball Shooting Posttest

Firstly, analytical prerequisite test was conducted using: 1) frequency distribution normality test, and 2) homogeneity test.

No	Group	Test	N	$\bar{x}$	SD	sig	p value	Conclusion
1	Experiment	S1P	15	28.88	5.29	0.575	0.05	Normal
2	Control			28.00	4.68	0.423		Normal
3	Experiment	S1P60	15	26.00	6.44	0.271	0.05	Normal
4	Control			27.11	4.85	0.529		Normal
5	Experiment	S2P	15	28.44	4.51	0.607	0.05	Normal
6	Control			29.11	6.23	0.123		Normal
7	Experiment	S2P60	15	29.11	5.11	0.604	0.05	Normal
8	Control			28.88	5.44	0.283		Normal

Table 3. Result of Data normality test

Normality test was conducted with Shapiro Wilk SPSS program help; the rationale of decision making used is that when sig. value in Shapiro Wilk table > p value (α 0.05), the data is distributed normally.

The homogeneity test on population variance is intended to test the similarity of variance in the population. The homogeneity test on population variance in this study was conducted using ANOVA analysis. The result of homogeneity test on population variation is shown in the following table.

No	Group	Test	N	F0	Ft	Conclusion
1	Experiment	S1P	15	0.238	2.48	Homogenous
2	Control					Homogenous
3	Experiment	S1P60	15	0.284	2.48	Homogenous
4	Control					Homogenous
5	Experiment	S2P	15	0.113	2.48	Homogenous
6	Control					Homogenous
7	Experiment	S2P60	15	0.013	2.48	Homogenous
8	Control					Homogenous

Table 4. Result of data homogeneity test

From the result of homogeneity test, it can be found F table value of 2.48. If Fstatistic < F value, it can be concluded that experiment and control groups have homogeneous data.

To find out the improvement of treatment result in this study, significance test was conducted using (paired t-test).

No	Group	N	Test	Mean		Variance	T statistic	T table	Conclusion
				Pre Test	Post Test				
1	Experiment	15	S1P	28.88	41.78	12.9	5.556	2.144	Significant
			S1P60	26.00	42.22	16.22	6.145	2.144	Significant
			S2P	28.44	41.33	12.89	6.124	2.144	Significant
			S2P60	29.11	44.00	14.89	7.438	2.144	Significant
2	Control	15	S1P	28.00	39.79	11.79	5.593	2.144	Significant
			S1P60	27.11	38.22	11.11	5.001	2.144	Significant
			S2P	29.11	38.67	9.56	8.521	2.144	Significant
			S2P60	28.88	42.00	13.12	8.498	2.144	Significant

Table 5. Result of data significance test

This development product contains cutting movement-based basketball medium shooting skill practice model for the 15-18 year age group male players in the form of guidance book. The discussion of research result gives an interpretation on the result of analysis furthermore connected to the relevant theories. Considering the research procedure, this research provides three discussion groups.

Firstly, preliminary study is an early identification of problem to be revealed and discussed in the study. Borg and Gall (1983) concluded that need analysis is the early collection of information on the difference between the condition existing in the field and the expected condition for solving the problem existing. The author selected the subject of research, i.e. 15-18 year age group male players in Karanganyar Regency. The training using cutting movement-based basketball medium shooting skill practice method is still relevant to the movement learning and the characteristics of 15-18 year age. The author selected basketball club in Karanganyar Regency as the location of research because it has fairly good practice building development.

Secondly, product development aims to obtain a design of basketball medium shooting skill practice model consistent with theoretical foundation. a) theoretical study was conducted using basketball theory, practice theory, skill theory, movement learning theory, shooting theory, and cutting movement theory corresponding to the characteristic of 15-18 year age. b) Development drafting. This research and development produce theoretical-conceptual, procedural-methodological, and practical-empirical products. The draft of cutting movement-based basketball medium shooting skill practice model consists of: (1) theoretical study as the basic instruction of implementation, (2) 8 (eight) forms of cutting movement-based basketball medium shooting skill practice model are appropriate to the movement learning stage and the characteristic of 15-18 year age, (3) the cutting movement-based basketball medium shooting skill practice program.

Thirdly, from the trial stage, it can be found that the result of research consists of expert's evaluation in the form of qualitative and quantitative data, small-scale test, large-scale test, final product revision, and large-scale test on the cutting

movement-based basketball medium shooting skill practice model in improving the medium shooting skill of the 15-18 year age group male players.

CONCLUSION

Considering the result of data analysis and discussion, it can be concluded that the cutting movement-based basketball medium shooting skill practice successfully improves the medium shooting skill of the 15-18 year age group male players significantly. It is in line with the need analysis of practice model related to the player's age characteristic. The use of model in the practice is very important to achieve the objective, because in the practice model there are theoretical foundation and other factors used to reinforce the practice model. The cutting movement-based basketball medium shooting skill practice is developed corresponding to the players and the coach's need. Using the cutting movement-based basketball medium shooting skill practice model, their technical skill is expected to develop according to the stages of practice building.

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