

Multilateral Training Model in Sport Performance

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Abstract-*This research aims to produce the training method in sport performance base on multilateral development and its effect in performance. This study uses a research and development approach. The samples consist of 16 primary schools extracurricular in Yogyakarta Province, by purposive sampling technique. The study produces (1) The Multilateral training Model which consists of five exercises unit in one session. The training model can be used at primary school sport club especially at age of 9 to 12 years old. (2) There is a significant positive effect of fitness level and the basics sport skill abilities of the student athletes after they have been trained with multilateral training*

Key words: *Multilateral, model, sport performance*

I. INTRODUCTION

Multilateral training is a development based on the freedom of movement in children as a broad base effort on future performance coaching. The importance of multilateral training has been recognized by sports scientists who are characterized by the inclusion of this multilateral training in the pyramid of coaching systems, as practiced by Bompaa, Thompson, and other experts [1]. Sports scientists have presented and suggested for designing long-term and continuous exercises through clear training stages from multilateral basic exercises, advanced training, and development exercises, leading to optimal achievement.

Applications in the field are still indicated by the fall of several victims in athletes who are not able to achieve optimal performance in the golden age. Spartan, ambitious, and irresponsible training practices for young athletes produce various bad consequences. We often see potential athletes who get injured and leave sports. We also witness a number of young athletes suffering from dangerous diseases (osteoporosis, heart, etc.) due to their premature heavy training.

Meanwhile the competition system developed by various sports organizations and other institutions often ignores multilateral development. Competition in children's age groups is often too special and oriented towards the achievement of certain branches or sports numbers so that young children do narrow development at a young age. It even impressed that there was a competition between one sport and another to recruit young children into sport branch by providing special training and competition.

On the other hand, the interest of children in carrying out sports activities decreases. Enthusiasm between boys and girls is also different; boys tend to do physical activities more often [8]. The difference of enthusiasm in taking sports

learning is higher in younger than older children [9]. This is due to the intensification of educational competition and many entertainments offered in the modern era such as television, computers, gadgets, PlayStations, and others. Watching television is also closely related to child Body Mass Index or BMI (Ross). While children's activities in playing in an open field are increasingly limited by the narrowing facilities and the atmosphere of play culture which is increasingly eroded. This fact resulted in the low level of physical fitness of Indonesian children

Campaigns for long-term and sustainable training programs through the right stages cannot be done only by speeches, lectures and advice through scientific books and by blaming coaches who are not qualified, but it is necessary to carry out an action campaign that provides awareness and creates needs for all parties to implement a proper coaching implementation system through a long-term and tiered process based on the process of growth and development from childhood to adulthood. The training process at the multilateral does not live up to expectations. Based on the observations of researchers in the field, many trainers who train young athletes experience many obstacles such as: limited infrastructure that makes them do training that is far from ideal training. Besides, the trainers also carry out training using a single unit exercise approach, for example in one training session they carry out certain sports movement techniques without any movement from other sports branches that have different motion structures.

In the short term, it is normal for many students to experience a lack of physical fitness level which will certainly affect the level of performance of the younger generation in the future. In turn, some of them must become athletes in defending Indonesia's name in international sporting events such as the SEA Games, Asian games, and the Olympics. Readiness in preparing a generation who is ready to replace the previous generation is a task that must be carried out.

According to Bompaa, multilateral training is the development of various skills and motor abilities (motor abilities) by adapting various training needs to develop overall adaptation [1]. That every child at a young age needs multilateral skills development as a foundation of motion needed to build good physical fitness and prepare themselves for further development in sports achievements. Based on those opinions, the multilateral ability is very important to be owned by athletes, the benefits obtained are the experience of movement and awareness of movement for the success of performance in various situations. According to Bompaa, multilateral development can be started from children aged 6

to 10 years to underlie before athletes enter the specialization stage [1]. This stage is often called the initiation stage. Research from Krasilshchikov found that multilateral exercise and specific exercises in elementary schools have no significant difference in fitness [5].

Multilateral ability is an urgent matter due to weakness in its training, multilateral ability is ability possessed by an athlete or individual in carrying out conscious movements, and is carried out in different situations and usually has varied movements. Multilateral motion is a combination of various basic and basic movements of sports skills. Basic motion is divided into three main types of motion, namely: locomotors, non-locomotors and manipulative motion.

Locomotors ability is used to move the body from one place to another or to lift the body up like jumping and hopping. Other motion capabilities are walking, running, skipping, jumping, sliding and running like a gallop. Non-locomotors ability is non-locomotors capability performed on site. Without sufficient space to move, the non-locomotors capability consists of bending and stretching, pushing and pulling, lifting and lowering, folding and twisting, shaking, circular, bouncing and others. Manipulative ability is a manipulative ability developed when a child is mastering various objects. Manipulative abilities involve more hands and feet, but other parts of our body can also be used. Object manipulation is far superior to eye-foot and hand-eye coordination, which is quite important for items: walking (step movement) in space.

These three locomotors, non-locomotors and manipulative motions in the early stages of coaching or training are purely given as a basic motion to strengthen the enrichment of motion in children. The basic motion of sports is the advanced stage of laying down the basic movements of the 3 movements above. The basis of the sport's movement underlies several basic multilateral movements. Therefore, the relationship between three of them is very close, not only basic movements, but also basic sports motion and some basic multilateral movements. Therefore this study tries to present a multilateral training model that is expected to be applied in elementary school sports clubs in accordance with the mandate of national education. This research also wants to see how far the exercise model can function positively for sports achievement in aspects that can be observed in the study period such as the level of physical fitness and basic movement skills of students.

II. METHOD

This study aims to produce a method of training with a multilateral development approach along with the effect of exercise. This research was conducted using a research and development approach. The research sample consists of 16 elementary schools that carry out extracurricular activities in Yogyakarta Province, and were taken by purposive sampling technique.

III. RESULT AND DISCUSSION

Diverse sports activities are very helpful for children in the process of learning motion, as stated by Sukadiyanto one of the principles of training is the principle of variation [4]. With various types of learning processes and exercises, children will not get bored and tedium which are a kind of

psychological exhaustion, so that diversity can attract children in the process of learning motion.

Children equipped with a variety of basic movement skills that are good and correct according to their age and abilities will have a positive impact on growth both physical and psychological side. Adequate activity for them will also improve cognitive abilities [6]. 1 h per day of physical activity can prevent clustering of cardiovascular disease risk factors [7]. With the formation of a good and true motion learning process, children will be better prepared to carry out more complex motion activities. Without neglecting specialization efforts, at first it must be fostered towards multilateral development in order to obtain the necessary foundations [2]. By having a diverse movement experience, children will have a stronger movement pattern and awareness to be able to perform more efficiently in a variety of situations. Hence, the development of multilateral motion for children is considered important because many uses and benefits can be obtained.

A. Need Analysis

Multilateral Training Model Is A Concept In A Training Session Consisting Of Various Motion Units Oriented To Various Basic Movements Of Sport. This Model Is Expected Not Only To Be Accomplished But Also To Be Able To Achieve The Objectives Of The Exercise Such As The Achievement Of Basic Patterns Of Exercise, And The Increase Of Physical Fitness. Multilateral Training Models Need To Be Implemented Within The Basic Framework Of Sports Motion. Furthermore, Acc / Ncas Suggests That Children Play Sports To (1) Get Pleasure; (2) Friendship Or New Friends; (3) Feel Good; (4) Learn New Skills [10].

B. Model Development

The initial product of the multilateral training model in a multilateral training session is schematically designed in the following order: (1) Opening by teacher and warming up containing various games to increase body temperature and adaptation to this material, (2) Main material, which consists of (a) athletics / gymnastics games, (b) small ball games, (c) games with tools, and (d) big ball games, (3) Closing / cooling down, containing a game for cooling down which aims to restore body temperature and pulse. According to Bennet, Howell, and Simri conducted a survey of activities given in various countries [3]. They identify elements of physical education that are commonly given in elementary school are: (1) basic motions that include the road, running, jumping, kicking, pulling, pushing, rolling, hitting, balancing, catching and rolling; (2) games with low organization and running; (3) rhythmic activities, folk dance, singing and music games (musical games); (4) the basics of skills for various sports and games, usually starting approximately in the fourth or fifth year.

A. Result of Model Trial Analysis

The initial product of the multilateral training model has been produced by conveying the form, structure and procedures for carrying out the exercise. For the trial model

has been determined with two stages, namely small group trial and field trial.

B. Small Group Trial

In this study, the number of limited trial samples was taken by four elementary schools in Yogyakarta City and Sleman Regency with the categories of two schools that had a large field (Category A) and two schools that had a narrow field (category B). The results of small group trial can be described below:

TABLE I. IMPLEMENTATION OF SMALL GROUP TRIAL

School	Organization				Student (social and emotion)
	Class	Tools and place	Time	Material	
1 A	Xxx	Xx	Xx	x	Xxx
2 A	Xxx	Xxx	Xx	xx	Xxx
1 B	Xxx	Xxx	Xx	x	Xxx
2 B	Xxx	Xx	Xx	x	Xxx

Information: xxx = well done (3 indicators), xx= sufficient (2 indicators), x=insufficient (1 indicator)

From the summary above, several recommendations for model improvement in small group trial are as follows: (1) Restrictions on the types of movements in the units carried out. The kind of motion suggested is one unit of motion on each subject. This is done so that the movement is easier to learn and strengthens the mastery of the movement. Besides, the transition time is smoother so that the frequency of the movement is more and has a better chance to provide corrections, (2) Existing equipment needs to be prepared for several different activities and to develop tools so that management of the equipment is more efficient, (3) Management of materials and tools needs to be harmonized so that the arrangement is easier. For example, after playing the hurdle, proceed with throwing the target with a ball where the target is a goal that has just been used to hurdle so there is no need to replace the tool.

C. Field Trial

TABLE II. IMPLEMENTATION OF FIELD TRIAL

Sschool	Organization				Student (social & emotion)
	Class	Tools and Place	Time	Material	
1 A	xxx	Xxx	Xxx	xxx	Xxx
2 A	xxx	Xxx	Xxx	xxx	Xxx
3 A	xxx	Xxx	Xxx	xx	Xxx
4 A	xxx	Xxx	Xxx	xxx	Xxx
5 A	xxx	Xxx	xxx	xxx	Xxx
6 A	xxx	Xxx	Xxx	xxx	Xxx
1 B	xxx	Xxx	Xxx	xxx	Xxx
2 B	xx	Xx	Xx	xx	Xxx
3 B	xxx	Xxx	Xxx	xxx	Xxx
4 B	xxx	Xxx	Xxx	xxx	Xxx
5 B	xxx	Xxx	Xxx	xxx	Xxx
6 B	xxx	Xx	Xxx	xxx	Xxx

Information: xxx = well done (3 indicators), xx= sufficient (2 indicators), x=insufficient (1 indicator)

The results of observations in the field trial above also produced several notes that might give effect to the implementation of the multilateral exercise model test as follows: (1) there is a hidden curriculum, namely the unknown quality of physical education teachers as trainers who were the subject of the trial. It means that it can happen because the trainer is unable; the training does not go well. For this reason, preliminary observations are made through MGMP to determine teachers who have standard abilities, (2) the understanding of the concept and the readiness of the trainer in preparing the material on the previous day allows on the trial day the trainer is not so ready. It could be overcome by giving an initial explanation together to get the same readiness and perception about Multilateral Training Model (MTM).

The final MTM format as the product of this study includes: Definition of Multilateral Training Model, Schematic Images of Multilateral Training Model, Multilateral Training Model Procedures, and Preconditions for the Application of Multilateral Training Model.

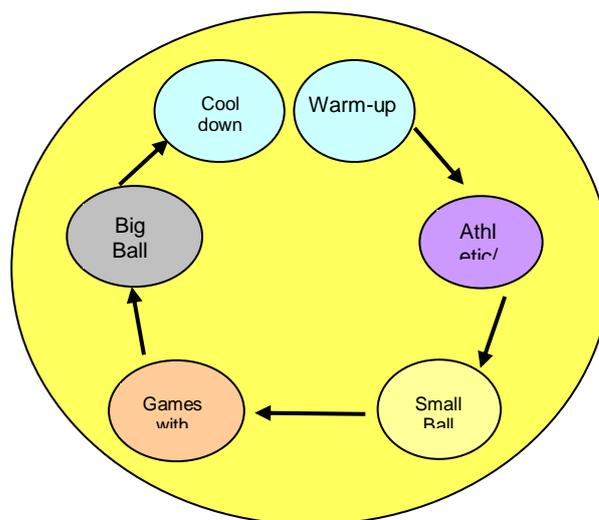


Fig 1. Schematic Final Product of Multilateral Training Model

D. Result of Pre-test and Post-test TKJI and Sport Movement Basic

TABLE III. PERCENTAGE OF PRE-TEST RESULT TKJI BASED ON CATEGORY AND GENDER

Category	Pre-test		Post-test	
	Male	Female	Male	Female
Good	10%	0%	40%	60%
Sufficient	90%	90%	60%	40%
Insufficient	0%	10%	0%	0%

TABLE IV. SPORT MOVEMENT BASIC TEST BASED ON CATEGORY AND GENDER

Category	Pre-test		Post-test	
	Male	Female	Male	Female
Excellent	10%	20%	90%	80%
Good	40%	60%	10%	20%
Fair	50%	30%	0%	0%

Poor	0%	0%	0%	0%
Very Poor	0%	0%	0%	0%

The result of sport movement basic test shows that both male's and female's basic movement skill increase. For male category, 10% students are categorized excellent in the first meeting and the number of students who are in excellent category increases to 90% in third cycle. Whereas for female who are excellent category increase from 20% in the first cycle, to 80% in the second cycle. From these data, it could be interpreted that there is an increase in basic skills of sports motion for extracurricular athletes in elementary schools by applying multilateral training.

E. Final Product of Multilateral Training Model Schematic of Multilateral Training Model

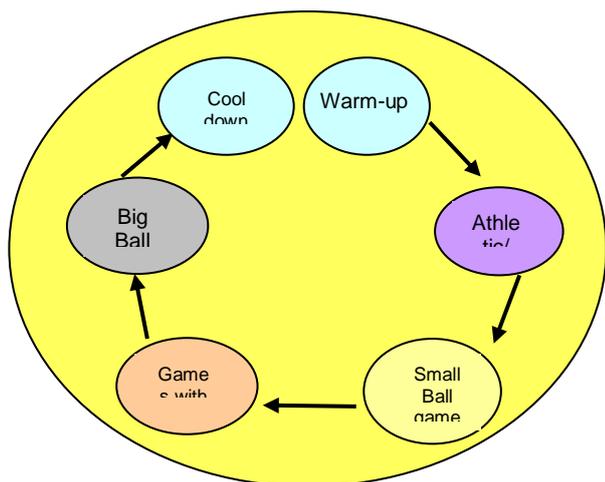


Fig. 2. Final Schematic of Multilateral Training Model

F. Post for Wide Field

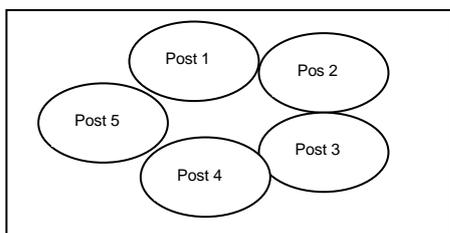


Fig 3. Post Arrangement for Wide Field

G. Design for Restricted Field

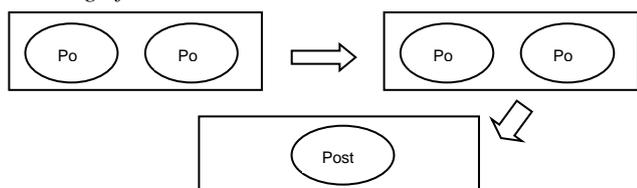


Fig 4. Post Arrangement for Restricted Field

H. Design for Narrow Field



Fig 5. Post Arrangement for Narrow Field

IV. CONCLUSIONS

The conclusions that can be drawn based on the results of the research and discussion are (1) Multilateral Training Model is an exercise model for beginner aged 10-12 which contains various basic sports movements that can be used in primary schools, especially in fourth to sixth grade, (2) multilateral Training Models that are ready to use in physical education as a training strategy especially for fourth, fifth and sixth graders, (3) Multilateral Training Model contains four main units, one warm up unit and one cool down unit. In the core unit, there are four basic sports movements, namely athletics or gymnastics, sports with small balls, sports with tools and sports with large balls, (4) The results of field testing found that the Multilateral Training Model can have implications for multilateral training sessions that can be applied in extracurricular or co-curricular training in schools by generating a significant increase in the level of physical fitness and basic skills of student / athlete sports movement.

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