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FUTSAL DEFENSE SYSTEM MODEL FOR 14-16 YEARS OLD

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Abstract : The purpose of this research is to produce a futsal defense system model for 14-16 years olds and to test the effectiveness of the futsal defense model for 14-16 years olds. The method used in this research is research and development. Data collection techniques used, interviews, tests, and field observations. The results of the product effectiveness test by comparing the two groups. the treatment group using the product development, and the control group using the pretest and posttest designs. The mean score of each group based on the test is that the effectiveness of the experimental group is higher than that of the control group. The improvement of the futsal defense system for ages 14-16 years at the time of the pre-test showed t-count = 22, 219,> t-table = 1.70329, df = 27 and p-value = 0.00 <0.005. Based on the comparison of the test results. the increase in test results for the experimental group increased significantly than that of the control group. The subjects in this study were MC Utama athletes aged 14-16 years. It is hoped that this research can provide benefits for sports practitioners, especially in the sport of futsal.

Key words : Futsal, Defense, Coaching.

INTRODUCTION

Education Is a human effort to foster his personality in accordance with the values in society and culture. Physical education has a very large influence and contribution, especially for children's self-development, including aspects of physical fitness, movement skills, critical thinking, social reasoning, emotional stability, moral action, aspects of a healthy lifestyle and introduction to a clean environment through physical activity and spiritual development. In this millennial era with the advancement of technology it makes it easier for all activities to cause a person to move less, such as the use of remote controls, elevator computers and escalators and they are required to spend a lot of time at work so that sports activities are rarely done. Whereas by exercising we will feel, refreshed, comfortable, relaxed, fit

and of course the body will remain healthy. Most people do not realize the importance of health in every human being. Even though it is known that the national sports system aims to maintain and improve health and physical fitness, achievement, quality of human life, instill moral values and noble morals, sportsmanship, discipline and foster national unity, strengthen national defense, and elevate the nation's dignity.

Sports is one of the activities that cannot be separated from Indonesian soil because it is an integral part of human civilization whose existence is useful for human life. Someone exercising can maintain health and provide personal pleasure. Health and pleasure can also increase performance for the sport they are engaged in. Sports as a tool to uphold the name of a nation at an international stage. The pinnacle of sports achievement is certainly not easy to obtain, but requires systematic and sustainable preparation using a scientific approach. The pillar of national sports development in Indonesia begins with recreational sports and educational sports as the culmination of which is achievement sports. A team or an athlete who wants to have great achievements in sports. It is absolutely necessary to do a routine and well programmed exercise.

Futsal is a team sport of five people each. The aim is to get the ball into the opponent's goal, in a very fast and dynamic game. In Indonesia, futsal is very popular because the game does not require a large area of land. In addition, there are fewer open fields, especially in big cities. Many people make use of the narrow land in soccer games such as dusty alleys and open spaces under the flyover. The limitations of the field provide an impetus to channel your hobby in futsal. Futsal is a sport that is commonly practiced by children, adults, parents, both men and women with different ancestral backgrounds. This game has a lot of fans all over the world not only in cities, but in villages and even countries like Asia, Africa, Europe and America play this game. Futsal was first played in Uruguay in 1930(Robinson, 1998). Futsal is the international terminology for the game. A fusion combination of the Spanish language namely “soccer”, futbol in French ”indoor,”salon. Futsal is fast becoming popular in South America, especially in Sao Paolo Brazil (Dogramaci et al., 2011).

An athlete in achieving success in a sports achievement, especially futsal is their own ability. In this case the abilities referred to are four main categories, namely: (1) physical, (2) technical, (3) tactic, (4) mental (Harsono, 2015) However, in sports it is not only the physical side that influences, but also the psychological factors of the players. The psychological factors referred to here are positive thinking, setting goals for motivation, emotions, anxiety and tension. The psychological condition of players in facing competition is very important for athletes to achieve the expected or maximum achievement targets(Darmanto et al., 2018)

Based on the results of preliminary observations at one of the Futsal Clubs in Jakarta, information was obtained that there are still many athletes who do not understand the defense strategy itself. Even though the defense strategy has an important role in the game of futsal. Several important points in defense include: (1) individual defense (2) Zone Defense (3) mixed defense (4) alternating defense (Hierro, 2017: 61). These points are used as a reference for the coach in the process of improving the defensive strategy. In addition, various defense training models must also be owned by a coach, so that in the training process it can maximize the potential of the athlete Unfortunately, the selection of a defensive training model given by the trainer is less precise and less varied.

The choice of defensive training in playing by the coach is incorrect and less varied, making the team defense always ineffective, interesting, and leading to the team's defeat (Woolley, 2019 : 1384). This of course becomes material for a trainer's evaluation of the training process. There are many things that need to be mastered by a trainer in providing training, one of which is variations in training. In addition, a monotonous form of training will certainly lead to boredom for athletes in the training process which ultimately reduces the athlete's interest in training. Every athlete has different personality, characteristics, physical, social behavior and intellectual capacity. To avoid the boredom problem, the coach must be creative, need to know the characteristics and types of personal skills of a player so that he is able to provide variations in training in the form of training sessions according to the needs of the athlete. The trainer can arrange a variety of exercises in various forms such as stretching.

When preparing the strategy to be presented, the trainer must understand the approach used during the training process. Through interaction between players, it creates a sense of pleasure and interest during training, then naturally there will be stimulation, interest, motivation in an athlete to continue to follow the training process. The defense training model for the sport of football was previously researched by Haikal Millah from the University of Siliwangi in 2015. Analysis of the defensive transition to attacking the UNJ men's futsal team in the 2019 Jakarta regional student league group stage. Analysis of defensive success rates (poke tackling, and intercept) on the futsal team at SMPN 70 Jakarta at the 2014 adventure7 cup championship at SMAN 7 Jakarta. Some of the studies above have not found research in the development of a defense system model using the axis points in the futsal sport.

Based on these findings, a futsal player needs to provide understanding and modeling of the futsal defense system. The goal is that all players can bring out their best in futsal defense and ultimately provide the best results for the newest and j product is sufficient.

a) Literature study is carried out for a temporary introduction to the product to be developed. This literature study is carried out to collect research findings and other information related to the planned product development.
b) Small Scale Research. Researchers often have questions that cannot be answered by referring to learning resources or texts. Researchers need to conduct small-scale research to find out a few things about the product to be developed.

1. Planning (Planning Research).

After conducting a preliminary study, the developer can continue with the second step, namely planning the research. R & D research planning includes: 1) Formulating research objectives, 2) Estimating funds, energy and time, 3) Formulating the qualifications of researchers and forms of participation in research.

2. Develop Preminary form of product (Design Development)

This step includes: 1) Determining the product design to be developed (hypothetical design), 2) Determining the research facilities and infrastructure needed during the research and development process, 3)

Determining the stages of implementing the design test in the field, 4) Determining the party's job description - parties involved in the research.

3. Preliminary Field Test (preliminary field testing or design validation)

This step is a limited product test which includes: 1) conducting an initial field test of the product design, 2) having a limited nature, both the substance of the design and the parties involved, 3) the initial field test is carried out repeatedly in order to obtain a feasible design, both substance and methodology

4. Main prodcut revision (Limited Field Test Result Revision)

This step is a model or design improvement based on a limited field test. The initial product refinement will be carried out after a limited field trial is carried out. In this initial product refinement stage, more is done with a qualitative approach. The evaluation that is carried out is more of an evaluation of the process, so that the improvements are internal.

5. Main Field Test (product trial)

This step is a broader product test which includes: 1) testing the effectiveness of product design, 2) testing the effectiveness of the design, generally using the experimental technique of the repetition model, 3) The results of the field test produce u8 the first field test. Improving the product from the results of this wider field test will further strengthen the products we develop, because at the previous field trial stage it was carried out with a control group. The designs used were pretest and posttest. In addition to internal improvements. This product improvement is based on the evaluation of the results so that the approach used is a quantitative approach.

6. Operational Field Testing (Feasibility Test)

This step should be done on a large scale which includes: 1) testing the effectiveness and adaptability of the product design; 2) design effectiveness and adaptability tests involving potential product users; 3) the results of the field tests obtained a design model that is ready to be applied, both in terms of substance and methodology.

7. Final Product Revision (Final Revision of Due Diligence Results)

This step perfects the product being developed for the accuracy of the product being developed. At this stage a product has been obtained whose effectiveness level can be justified. The

final product improvement results have a reliable "generalization" value.

8. Dissemination and implementation

Provide or present research results through scientific forums, or through mass media. Product distribution must be done after going through quality control.

This model has a more robust and perfect system of steps than the others. Able to address real and urgent needs (real needs in the here-and-now) through developing solutions to problems while generating knowledge that can be used in the future. In addition, it produces a product or model that has a high validation value, because it goes through a series of field trials and is validated by experts according to their fields. However, the weakness of this development model requires a relatively long time and involves many people. Because the procedure taken is relatively complex.

RESULT AND DISCCUSSION

The first research result is the analysis of needs by using interview methods, tests and observations in the field to find out the problem of the defense system capabilities of the Main MC futsal players and AFK Sinjai. The results of the interview found that there are still many athletes who have not mastered the defense system itself, cooperation in defense is still very lacking and the absence of models - models of defense exercises in one training program. Training is given in order to improve the ability to survive in the mc utama and AFK Sinjai futsal games.

Table 1.
Results of Needs Analysis and Field Findings

No	Question Points	Findings
1	Are players enthusiastic about participating in the futsal training process?	Athletes are very passionate about participating in futsal training.
2	What materials do coaches usually give players during futsal practice?	Mastery of basic techniques and physical exercises
3	Are the facilities and infrastructure owned adequate to be used in practicing futsal?	The facilities and infrastructure for training are adequate
4	Does the coach provide specific models of futsal defense systems?	In the process of the futsal defense system, the variety of training provided is very lacking and seems boring.
5	In the process of the futsal defense system, the variations in the training given are very lacking and seem boring. ?	So far, the trainer in training the defense system still seems monotonous and less varied.
6	Do you need a variety of futsal defense system	Variations in defense system models are needed to improve the

	models for 14-16 years olds?	quality of the player's defense, in addition, variations in defense models are needed so that players do not experience boredom in the training process.

The data collection site in this study was conducted at Club MC Utama and AFK Sinjai. The research was conducted from April 2019 to July 2019. This research is a model of futsal defense system. In addition, this research will produce products in the form of futsal defense system model design. This defense system model will be made into a guidebook that can be a reference for futsal coaches and players.

The validity test will be carried out to determine the extent to which the defense training model is made feasible to use. Based on this, the validity test of this training model uses the Expert Justification test, where the training model that has been created and tested is then consulted and assessed by experts in the field of futsal. The criteria for futsal experts in validating this training model include: 1) Having a training license at the Asian level 2) and having at least 3 years of training experience at the national level.

First Stage Results / Small group trials with a model that has undergone changes in accordance with the direction of the experts. Based on the data from the results of the small group evaluation conducted by the researcher, it can be concluded that the futsal defense model development product is feasible to be tested in large groups with the following suggestions: (a) Overall, try to make the futsal defense system models easy to understand by the user so that later the futsal defense system model can actually be done and the hope is that it will make it easier for participants to learn it. (b) In the futsal defense system model, the cover should only cover the opposing player and not take the ball when covering the opponent in implementing the futsal defense system. (c) the facilities and Infrastructure used in the exercise must be completely safe.

Table 2.
Revised Results From Experts To The Perthanan Futsal System Model For Ages 14-16 Years

No	Defense System Model	Suggestions and Feedback
1	LSM Futsal Defense System Model 1	It can be implemented because it can be done
2	LSM Futsal Defense System Model 2	It cannot be applied because it is not appropriate for the futsal defense system model
3	LSM Futsal Defense	It can be implemented

	System Model 3	because it can be done
4	LSM Futsal Defense System Model 4	It cannot be applied because it is not appropriate for the futsal defense system model
5	LSM Futsal Defense System Model 5	It can be implemented because it can be done
6	LSM Futsal Defense System Model 6	It cannot be applied because it is not appropriate for the futsal defense system model
7	LSM Futsal Defense System Model 7	It can be implemented because it can be done
8	LSM Futsal Defense System Model 8	It cannot be applied because it is not appropriate for the futsal defense system model
9	LSM Futsal Defense System Model 9	It can be implemented because it can be done
10	LSM Futsal Defense System Model 10	It cannot be applied because it is not appropriate for the futsal defense system model
11	LSM Futsal Defense System Model 11	It can be implemented because it can be done
12	LSM Futsal Defense System Model 12	It cannot be applied because it is not appropriate for the futsal defense system model
13	LSM Futsal Defense System Model 13	It can be implemented because it can be done
14	LSM Futsal Defense System Model 14	It cannot be applied because it is not appropriate for the futsal defense system model
15	LSM Futsal Defense System Model 15	It can be implemented because it can be done
16	LSM Futsal Defense System Model 16	It cannot be applied because it is not appropriate for the futsal defense system model
17	LSM Futsal Defense System Model 17	It can be implemented because it can be done
18	LSM Futsal Defense System Model 18	It cannot be applied because it is not appropriate for the futsal defense system model
19	LSM Futsal Defense System Model 19	It can be implemented because it can be done
20	LSM Futsal Defense System Model 20	It cannot be applied because it is not appropriate for the futsal defense system model

From the results of small group trials it can be concluded that the overall futsal defense system model is feasible because all small group trial subjects feel happy and are able to carry out all the futsal defense system models that the researchers developed. The results of small group trials show that the futsal defense system model product can be continued to the next stage, namely large group trials involving larger research subjects.

Based on the evaluation of the small group trials conducted, the following conclusions can be drawn:

a. Overall variations of the futsal defense system model items for ages 14-16 years, the most important thing to note is the order of the difficulty level of the futsal defense system model items starting from the easiest to the most difficult so that the mastery of the training model is in accordance with the plan and the ability to master the
defense system model. player increases

b. When implementing a defense system model in the field, players must focus more on paying attention to the coach's direction.

c. The trainer must master the training material or the defense system model item that is applied.

d. The coach must always monitor the players during the training process so that the training objectives can be achieved as expected.

The results of small group trials conducted on 10 defense system models that have been evaluated by futsal validation experts, based on the results of the overall analysis 10 models are feasible to continue large group trials.

RESULTS OF THE SECOND STAGE / TESTING THE LARGE GROUP

The futsal defense system model product for ages 14-16 years, the defense system model has been improved based on the results of the evaluation at the small group trial stage then the large group trial stage continues. Based on the results of the small group trial, there were 10 models that were feasible and could be used in accordance with the suggestions and input of the validation experts. At this stage the researcher used 6 futsal teams (30 people) as the research subject. The research data uses 30 players to the application of the futsal defense system model for ages 14-16 years shown in the following table:

Table 3.
Summary of Large Group Trial Results.

No	Defense System Model	Suggestions and Feedback
1	LSM Futsal Defense System Model 1	It can be implemented because it can be done
2	LSM Futsal Defense System Model 2	It can be implemented because it can be done
3	LSM Futsal Defense System Model 3	It can be implemented because it can be done
4	LSM Futsal Defense System Model 4	It can be implemented because it can be done
5	LSM Futsal Defense System Model 5	It can be implemented because it can be done
6	LSM Futsal Defense System Model 6	It can be implemented because it can be done
7	LSM Futsal Defense System Model 7	It can be implemented

		because it can be done
8	LSM Futsal Defense System Model 8	It can be implemented because it can be done
9	LSM Futsal Defense System Model 9	It can be implemented because it can be done
10	LSM Futsal Defense System Model 10	It can be implemented because it can be done

The results of large group trials conducted on 10 futsal defense system models for ages 14-16 years, based on the evaluation results from validation experts and input from experts, all models are feasible to use.

Model Effectiveteness Test

After going through small group trials and revision of the second stage of the futsal defense system model product, followed by field testing and in the third stage revision of the futsal defense system model product, to determine the effectiveness of the product, an implementation process was carried out using a pre-experimental research design in the form of "One group pretest-posttest design". This product trial was carried out in Jakarta on players aged 14-16 years with a total of 30 futsal players (6 teams).

Table 4.
Results of one-sample statistics (average value)

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	18.46	8	1.753	.331
	Post Test	24.75	8	1.506	.285

Based on the results of the output using SPSS 16, the mean value of the futsal defense system model results before being given the training model is 18.46 and after being treated with the defense system model 24.75 means that the average value of the futsal defense system model for ages 14- 16 years of improvement.

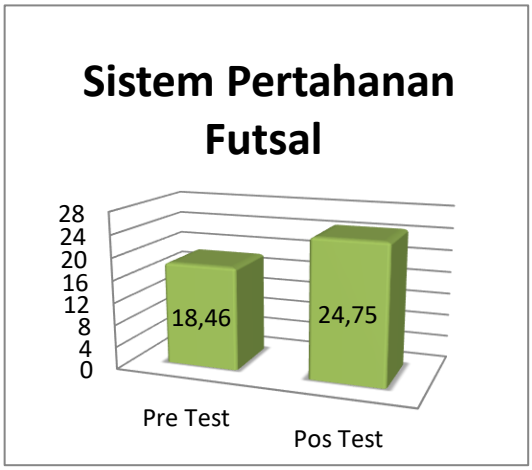
Table 5.
Paired Samples Correlations

Paired Samples Test								
		Paired Differences					f	ig. (2-tailed)
		Mean	Std. Deviation	Mean	95% Confidence Interval of the Difference			
					Lower	Upper		
Pair 1	re Test - Post Test	6.286	.979	374	7.053	5.518	16.809	27	.000

In the significance test of the difference with SPSS 16, the average value = 4.96 shows the difference

between the pre-test and post-test results, the results of t-count = 16.809> t-table = 1.70329, df = 27 and p value = 0.000 < 0.05, which means that there is a significant difference between the defense system model before and after the treatment model

Based on these results it can be concluded that the futsal defense system model for 14-16 years of age is effective and can increase the ability of the defense system at the age of 14-16 years.



The futsal defense system model for 14-16 year olds that has been developed has significant effectiveness.

The comparison of the results of the average notes before and after being given the futsal defense system model treatment can be illustrated by the pie diagram as follows.

Figure 1.
Bar Chart (Product Feasibility Trial)

Product Perfection

The test results obtained before and after treatment can be concluded that the futsal defense system model for 14-16 years olds is feasible and effective to improve players' defensive abilities. There is a comparison of the numbers that show that the results of the initial test and the final test have progressed, from the initial test which averaged 19.89 then treated in the form of defense system models that have been developed then the final test or post test is then held to determine the effectiveness. The model developed and the average data obtained is 24.86, so the futsal defense system model is effective for developing defenses for players aged 14-16 years.

Based on the results of the research, it can be concluded that the futsal defense system model for 14-16 years olds that was developed has a significant level of effectiveness. The input that will be submitted is as follows:

a. Implementation instructions and drawings on the model must be clearly arranged and made so that they are easy for players to understand.

b. The distance between the cones must be considered and adjusted to the objectives to be achieved.

c. The defense system model must be in accordance with the training

objectives, namely for players aged 14-16 years so that it starts from the easiest to the most difficult.

d. The facilities and tools used should be in accordance with the objectives of the exercise. The quality of the ball should also be considered to support the training process.

Product Discussion

The futsal defense system (LSM) model for players aged 14-16 years was made by researchers so that it can be a reference that can help coaches provide a variety of defense systems in futsal games. This model is prepared based on the needs of players in the futsal club. After this product is evaluated regarding some of the existing weaknesses and product improvements are made for better results, it can be said that some of the advantages of this product include:

a. Can increase the ability of the defense system

b. The resulting model has several variations from the easiest to the most difficult.

c. This model will increase students' interest in practicing because there are several variations of the defense system, so that the training process does not run monotonously and tediously.

d. This defense system model can be used as a trainer's reference to support the futsal defense training process while practicing.

e. Contribution to education, especially in the field of futsal

PRODUCT LIMITATIONS

This research was carried out by researchers as perfectly as possible in accordance with the abilities the researchers have, but if in this research there is still much that the researcher must admit and put forward. These limitations are as follows:

a. When researchers conduct field trials, it should be carried out in a larger scope.

b. The facilities and infrastructure used are inadequate and still limited

c. The product made is far from perfect. The explanation given to the defense system is still incomplete

CONCLUSION

Based on the data obtained from the results of field trials and discussion of research results, it can be concluded that 20 models of futsal defense system items for 14-16 years olds can be obtained 10 models of valid futsal defense systems based on the results of expert justification. In this research and development, products are theoretically

and conceptually, procedural, methodological, and empirical practice that can be justified scientifically.

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