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FUTSAL DEFENSE STRATEGY MODEL FOR ATHLETS 15-17 YEARS OLD

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ABSTRACT The purpose of this study was to produce a futsal defense strategy training model for athletes 15-17 years old and to test the effectiveness of the futsal defense model for ages 15-17 years. The method used in this research is research and development. Data collection techniques using 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 average value of each group based on the test is the effectiveness of the experimental group is higher than the control group. The improvement of the futsal defense system for the age of 15-17 years at the time of the pre-test showed t-count = 13,405, >t-table = 1.69236, df = 34 and p-value = 0.000.00<0.005. Based on the comparison of the test results, the increase in test results for the experimental group increased significantly than the control group. The subjects in this study were athletes of Club futsal in Soppeng Regency aged 15-17 years and AFK Soppeng athletes aged 15-17 years. It is hoped that this research can provide benefits for sports practitioners, especially in futsal sport.

Keywords: futsal; model strategy; defend

INTRODUCTION

Futsal is a type of indoor soccer game that was invented by a physical education teacher from Montovideo, Uruguay, namely Juan Carlos Ceriani in 1930. In 1989 futsal held the first world-class competition in the Netherlands and published the official list of futsal referees, literally means indoor football. The history of Indonesian futsal began in 2002 when Indonesia was asked by the AFC to organize the final round of the Asian level futsal championship in Jakarta. Iran won this tournament, while Indonesia was only able to win 1x and draw 1x from 4 matches so they did not qualify in the group stage. Futsal matches are held at the local, regional, national and international levels (Narlan, Juniar, & Millah, 2017). Not to mention in the South Sulawesi area, Soppeng Regency, the enthusiasm of the community in futsal is very high, especially among students who take part in various competitions such as the Regent Cup, Kalong Cup, IMPS Cup and provincial level competitions.

Based on observations made by researchers in several futsal competitions that were participated in by these students starting at the district and provincial levels, there was a problem faced by futsal players, especially in maintaining their own defense, so that often goals were conceded both in defensive conditions and when counterattack by the opponent. Every futsal player must have the ability to survive, because in the futsal game the player's position shifts occur very quickly so that each player must be able to become a defender. In addition, Felipe Arruda Moura et al also stated that futsal "is an invasion game, to score a goal it is fundamental to advanced on the pitch" (Moura et al., 2011) After field observations, the researchers tried to dig up additional information by having discussions with several coaches and sports teachers who were in charge of the futsal team in their respective schools. The coach only concentrates on attacking strategies without realizing the importance of defensive training in futsal games. According to (Moore et al., 2014) futsal is a variant of football, is a sport played worldwide at an amateur, semi-professional and professional level. Based on (Permana, 2018) futsal has its own rules compared to football, all futsal regulations have been agreed upon by FIFA. However, by respecting the agreement of the relevant associations and who have prepared the

principles of these rules, the rules of the futsal game can be changed to suit the orders of beginners, especially those under the age of 16, women or players who are old enough (over 35 years).

Defense strategy is very important in futsal matches, especially in maintaining the team's winning score. A varied model of defensive training is also mandatory for a coach so that during training they can take advantage of the potential of the athlete, but the coach does not provide varied training so that it is not very effective, unattractive and leads to team defeat. Especially in the variety of defensive training provided. Each team must have a high quality of human resources to achieve achievements, therefore the coach must be able to develop the correct defensive strategy. Strategy and tactics are two things that complement each other and are closely related. (Benny Badaru, 2016). According to (Travassos et al., 2016) there are four elements in tactics and strategy in futsal games that must be considered, namely: (1) attacking, (2) defending, (3) transitioning from attack to defense, (4) transition from defense to defense. attack. The strategy must be in line with the tactics used in achieving a team's winning goal. And vice versa, because strategies without tactics are not in line, the expected goals will be difficult to achieve and even fail.

Human resources such as coaches, management, owners, officials, and team players. There are 2 factors that affect the ability of futsal athletes, namely the first internal factors: physical, tactical, technical and mental abilities. The second external factors: trainers, coaches, nutrition, facilities and infrastructure, organization, spectators and referees. These two factors are very important because they are interconnected with each other in improving performance. This course should not be considered a small problem because athlete motivation is part of the mental aspect which is one aspect of training and is very closely related to achievement. Coaches are required to understand how to motivate players, especially during training. Each athlete has a different personality, characteristics, physical, social behavior and intellectual capacity so that to avoid the problem of saturation, the coach must be creative in creating a happy atmosphere in training and competing and be able to provide variations in training in the form of training sessions according to the athlete's needs.

The model is basically something that describes a pattern of thinking. A model usually describes a whole concept that is interrelated. The model can also be seen as an attempt to concretize a theory as well as an analogy and representation of the variables contained in the theory," (Erfandy Wahyu, Mochamad Asmawi, 2019). Added (Suryadi Yusuf, 2017) "the model is an imitation of the original with the aim of obtaining something ideal by taking into account physiological factors, facilities, and the athlete's social environment". In principle, sport is a process of change for the better, namely to improve the physical quality, the functional ability of the body's equipment, and the psychological quality of the child or athlete being trained. (Prastya, 2019).

The exercise model that is applied must also be adapted to the physical and psychological conditions of athletes aged 15 - 17. The exercises that are applied must be arranged systematically starting from the easiest to the most difficult. Coaches are required to have clear goals and be able to design a good training model according to the needs of athletes aged 15 - 17 in the game of futsal.

Related to the background of the problem to be studied, the discussion of futsal strategy or tactics theoretically will discuss the defensive ability of the futsal team (Defensive). According to Joseph A Luxbacher defense is a skill or expertise in defending or fending off an opponent's attack. The basic principle of the defensive game is to guard (Muchtar Hendra Hasibuan, 2016). Scheunemann in (Sudjana, 2014) states that the principle of defense is (a) Back off between the ball and the goal itself, (b) Compact, (c) Forechecking (emphasis on the opponent's defense area), (d) Midfield pressing (pressing on the line middle) (e) Fall back (press on own defense).

METHODS

The method used is research and development based on Borg and Gall development method used qualitative and quantitative to reach all the data or information in order to obtain a comprehensive explanation. There are ten development steps proposed by Borg and Gall, the researcher uses all the steps in this development which are tailored to the characteristics to be studied. In this research consists of several stages of implementation. The stages in research are the most important aspects of

research. The sequence of stages in the research is divided into several implementation procedures, namely starting from the initial stage, making, implementing, to the final stage which is the implementation and completion stage. The steps in this development are.

1. Research and Development

Conducting research and compiling information including literature review, followed by observation of several subjects and preparing main reports of problems encountered. To start the research, the first step that must be taken by the researcher is to study the literature as a basic understanding, then direct observation in the field which includes observing the process and then identifying the problems faced and strengthened by interviews conducted directly, and using questionnaires.

2. Planning

Implement some planning involved in strategy definition and survival training, formulation of research objectives, determination of test sequences, expert validation (expert judges). The next step that must be done is to make an initial product design in the form of a futsal defense strategy training model design to simplify the training process and get good training results. This training model is developed systematically and logically so that this product is effective and feasible to use. In making the product that the researcher develops, the researcher must consult with expert judgment or futsal experts in order to produce the perfect product.

3. Develop preminary form of product

Develop initial product which includes preparation of materials, a compilation of books/modules/videos and evaluation tools. One way is to test experts which are carried out with a view to evaluating the parts that need to be added and subtracted from the types of training items developed, this is done on designs in the form of textual design drawings and direct demonstration techniques in the field of design and construction types of survival strategy exercises. Futsal aged 15-17, the experts involved in this R&D research are 3 sports education lecturers who are futsal experts. The evaluation results from the experts will be used as input in improving the design of the futsal defense strategy training model for ages 15-17 before being tested in small groups.

4. Preminary field testing

Conduct field trials early stages 1-3 use 10. Prior to the small group trial conducted before students are given the initial test of survival, survival strategies futsal exercises with the model developed

5. Main product revision

Implement product revision with inputs from the results of field trials early stage. The results of the small group trial will be used again as a base for a second evaluation after evaluation of previous experts that aim to improve survival strategy practice models before proceeding to the trial or trial stage of a large group.

6. Main field testing

Conducted a primary field test using 30 subjects. After the revision of the training model from the results of the previous trial was completed, the next step was to do a large group test or a test conducted on the field of 30 futsal athletes. Athletes who conducted field trials were futsal athletes from Soppeng Regency.

7. Operational product revision

Revise operational products by taking into account the input and results of the main field trials. The conclusions obtained from the field trials will be used as guidelines for the improvement and refinement of new products for the futsal defense strategy training model. The results of the athlete's response after doing the exercise directly are used as input for the evaluation of model improvements. Evaluation at this stage is the final evaluation of this futsal defensive strategy training model. After making improvements based on feedback from field tests, the product of a defensive strategy futsal training model is considered appropriate to be used and distributed.

8. Operational field testing

Compiling an effectiveness test or main product test using 35 subjects. The main purpose of this trial is to find out the correctness and effectiveness of the design and implementation in achieving the expected goals. There are several steps that must be taken, among others: (1) determine the group of research subjects (2) carry out the pretest (3) try the developed model (4) carry out the post-test (5) find the average score of the pretest and posttest and compare between the two (6) find the difference between the two averages through statistical methods (test-independent test) with the aim of knowing how much influence the use of the futsal survival

model aged 15-17 from the use of the formula model to process the data as a whole uses the SPSS 21 application.

9. Final product revision

Revise the final product by considering input from field trials. The final evaluation stage is carried out at the large group field test stage. The results of student responses to the futsal defensive strategy training model in the futsal game are the same as the questions in the previous evaluation stage which will later be used as a product revision of the results of the defensive strategy training model in the futsal game and can be implemented in general.

10. Dissemination and implementation

Make reports on products in journals and work with publishers to carry out the commercial distribution.

RESULT

The development of a futsal defense system model for ages 15-17 years is shown to get a more effective and varied model of the futsal defense system. The development of the model on the futsal survival system was carried out based on data from needs analysis obtained through distributing questionnaires to futsal players aged 15-17 years and interviews with futsal coaches in Soppeng Regency, South Sulawesi. Furthermore, the data obtained will be validated by 3 futsal experts obtained through a questionnaire. The data is the result of a small group trial with 15 subjects, a field trial of 30 subjects, and an effective test of 35 subjects.

Table 4.1: Results of Needs Analysis and Field Findings

No	Questions	Findings
1	Are players enthusiastic about following Futsal training process?	Athletes are very enthusiastic in participating in futsal training.
2	What materials are usually given by coach to players during practice futsal?	Mastery exercises on basic techniques and physical exercises.
3	What are the facilities and infrastructure owned adequate for use in practice futsal?	Facilities and infrastructure for training have not been said to be adequate, especially in the field.
4	Does the coach provide models specific futsal defense system?	In the process of the futsal defense system, the variety of training provided is very lacking and seems boring.

5	What efforts have been made by the coach in improving the technical ability to play futsal, especially in the futsal defense system?	So far, coaches in training the defense system still seem monotonous and less varied.
6	Are required futsal defense system model variations to the age of 15-17 years?	Variation model of the defense system is needed to improve the quality of the defense of the player, in addition to the variation of defense model is needed so that players do not experience boredom in the process of exercise performed.

Table 4.2: Conclusion of Expert Test Against Futsal Defense System Model

No	Name	Model Reception		Description
		Yes	No	
1	Defense System ModelThe Box Zone Defense	Yes		Feasible/Valid
2	Defending model straight line symbol	Yes		Feasible/Valid
3	The defending model symbol x the middle area		No	Feasible/Valid
4	Y symbol defending model	Yes		Feasible/Valid
5	Circle defending system model		No	Feasible/Valid
6	Square Symbol defending Model	Yes		Feasible/Valid
7	Parallelogram defending model		No	Feasible/Valid
8	Rectangle defending model		No	Feasible/Valid
9	Defending model Triangle symbol	Yes		Feasible/Valid
10	The defending model is the middle area box symbol	Yes		Feasible/Valid
11	The defensive model symbol Y in the middle area	Yes		Feasible/Valid
12	Triangle symbol defending model	Yes		Feasible/Valid
13	Fefense model, attack area box symbol	Yes		Feasible/Valid
14	Defense model, small triangle symbol, attack area	Yes		Feasible/Valid
15	Middle area triangle defense model		No	Feasible/Valid
16	The defending model symbol X		No	Feasible/Valid
17	Arrow symbol		No	Feasible/Valid

	survival model			
18	Attack area horizontal defense model	Yes		Feasible/Valid
19	Vertical defensive model	Yes		Feasible/Valid
20	The defensive model symbolizes a straight line in the middle area		No	Feasible/Valid

Based on the feasibility test conducted by the expert, it can be concluded that the variation of the futsal defense system model for players aged 15-17 years, the futsal defense system model is declared unfeasible so that the total futsal defense system model changes which initially amounted to 20 defense system models to 12 defense system models. and can be implemented to players aged 15-17 years. The variation of the defensive system model symbols 1,2,4,6,9,10,11,12,13,14 ,18,19, is a proper training model, so it is suitable to be applied to the futsal defense model item (symbol). For a large-scale test using a 10-item model for the next stage.

Table 4.3. Results of the Expert's Revision of the Futsal Defense System Model for Ages 15-17 Years

No	Defense Systems Models	Suggestions and Feedback
1	The Box Defense Zone Defense Model	It can be applied because it can be done
2	Defending model is a straight line symbol	It can be applied because it can be done
3	Y symbol defending model	It can be applied because it can be done
4	Box symbol defending model	It can be applied because it can be done
5	Triangle symbol defending model	It can be applied because it can be done
6	The Defending model is the middle area box symbol	It can be applied because it can be done
7	The defensive model symbol Y in the middle area	It can be applied because it can be done
8	Small triangle symbol defending model	It can be applied because it can be done
9	The Defending model is the middle area box symbol	It can be applied because it can be done
10	The Defending model is a small triangle symbol in the middle area	It can be applied because it can be done
11	Attack area horizontal defense model	It can be applied because it can be done
12	Vertical defensive model	It can be applied because it can be done
13		It can be applied because it can be done
14	The Defending model symbol x middle area	Cannot be applied because it is not properly done for the futsal defense system model
15	Parallelogram symbol defending model	Cannot be applied because it is not properly done for the futsal defense system model

16	Rectangle symbol survival model	Cannot be applied because it is not properly done for the futsal defense system model
17	The Defending model symbol Triangle middle area	Cannot be applied because it is not properly done for the futsal defense system model
18	The Defending model Symbol X	Cannot be applied because it is not properly done for the futsal defense system model
19	Arrow symbol defending model	Cannot be applied because it is not properly done for the futsal defense system model
20	The defensive model symbolizes a straight line in the middle area	Cannot be applied because it is not properly done for the futsal defense system model

The futsal defense system model for ages 15-17 years which has been evaluated by experts, then underwent a phase I revision with the results of the acquisition of 12 models that were feasible to be developed towards the next stage, namely small group trials. After the product design was revised, the next step would be to try out the model in a small group trial with 15 research subjects. The following is a summary of the results of small group trials:

Table 4.4. Resume of the Revised Results of Experts on the Futsal Defense System Model for Ages 15-17 Years into 12 items of Defense System model

No	Defense Systems Models	Suggestions and Feedback
1	Defense system model the box zone defense	It can be applied because it can be done
2	The defending model is a straight-line symbol	It can be applied because it can be done
3	Y symbol defending model	It can be applied because it can be done
4	Box symbol defending model	It can be applied because it can be done
5	Triangle symbol defending model	It can be applied because it can be done
6	The defending model is the middle area box symbol	It can be applied because it can be done
7	The defensive model symbol Y in the middle area	It can be applied because it can be done
8	Small triangle symbol survival model	It can be applied because it can be done
9	The defending model is the middle area box symbol	It can be applied because it can be done
10	Attack area horizontal defense model	It can be applied because it can be done
11	Vertical defensive model	it can be applied because it can be done
12	The defending model is a small triangle symbol in the middle area	It can be applied because it can be done

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

namely large group trials involving larger research subjects.

Table 4.5: Resume of Large Group Test Results

No	Defense Systems Models	Suggestions and Feedback
1	Defense zone box defense system model	It can be applied because it can be done
2	The defending model straight line symbol	It can be applied because it can be done
3	Y symbol defending model	It can be applied because it can be done
4	Box symbol defending model	It can be applied because it can be done
5	Triangle symbol defending model	It can be applied because it can be done
6	the defending model center area square symbol	It can be applied because it can be done
7	Middle area Y symbol defending model	It can be applied because it can be done
8	Small triangle symbol defending model	It can be applied because it can be done
9	defending model center area square symbol	it can be applied because it can be done
10	Defense model horizontal area attack	It can be applied because it can be done
11	Vertical defensive model	It can be applied because it can be done
12	the defending model small triangle symbol in the middle area	It can be applied because it can be done

The results of large group trials conducted on 12 models of the futsal survival system for the age of 15-17 years, based on the evaluation results from validation experts and input from experts, there are two models that are not feasible to use, so that the model used in the next trial is 10 model. The next step is after the large group trial and the refinement of the survival system model . Based on the evaluations found in the field as well as suggestions from experts, the improved model will be applied to the effectiveness test.

Tabel 4.6. Futsal Defense System Model Results for ages 15-17 years (PreTest), after Treatment (Post Test)

Name	Pre-Test	Post Test
Subject 1	15	20
Subject 2	13	19
Subject 3	15	20
Subject 4	14	20
Subject 5	16	19
Subject 6	15	20
Subject 7	17	20
Subject 8	15	13
Subject 9	16	24
Subject 10	13	20
Subject 11	15	23
Subject 12	17	20
Subject 13	15	20
Subject 14	17	19
Subject 15	15	20
Subject 16	13	20
Subject 17	16	23
Subject 18	15	24
Subject 19	18	23
Subject 20	15	20
Subject 21	14	24
Subject 22	17	20
Subject 23	15	20
Subject 24	18	24
Subject 25	17	25
Subject 26	13	24
Subject 27	15	20
Subject 28	18	20
Subject 29	17	24
Subject 30	15	23

Subject 31	18	25
Subject 32	15	24
Subject 33	17	23
Subject 34	15	23
Subject 35	15	22
Rata-Rata	**15,54**	**21,37**

Test was conducted to determine the results before being given treatment. The average test result of 35 players is 15.54 After being given treatment with 10 models of the futsal defense system that have been evaluated and validated, a post-test of 35 players is then carried out to find out whether there is an increase in the ability of the futsal defense system model. After the test, it is known that the model of the player's defense system has increased, marked by the increase in the post-test average value of 21.37. Based on the description above, there is a significant difference in the average results between the pre-test and post-test that the futsal defense system model for the age of 15-17 years developed is effective and can improve the ability of the futsal defense system.

Table 4.7. Results of one-sample statistics (average value)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test	15,54	35	1,482	,251
	Post Test	21,37	35	2,462	,416

Based on the output results using SPSS 16 that the average value of the results of the futsal defense system model before being given a training model is 15.54 and after being given treatment with a survival system model for ages 15-17 years, which is 21.37, meaning that the average value There is an increase in the futsal defense system model for ages 15-17 years

Table 4.6. Paired Samples Correlations

Paired Samples Test

		Paired Differences					t	f	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	Pre-Test -	5,829	2,572	,435	-6,712	-4,945	-13,405	34	,000

The significance test of the difference with SPSS 16, the average value = 5.829 indicating the difference between the pre-test and post-test results, the t-test result = 13,405 > t-table = 1.69236, df = 34 and the 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.

1. Product Improvement

Based on the advantages and disadvantages of the resulting product, there are several inputs that the researcher will describe in order to achieve the perfection of the resulting product. The inputs to be submitted are as follows:

a. Instructions for implementation and pictures on the model must be arranged and made clearly so that it is easy for players to understand.
b. The distance between cones must be considered and adjusted to the goals to be achieved
c. The model of the defense system must be in accordance with the objectives of the defense system training, namely for players aged 15-17 years so that it starts from the easiest to the hardest.
d. The facilities and equipment 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.

2. Product Discussion

After this product has been evaluated regarding some of the existing weaknesses and made improvements to the product for better results, it can be conveyed some of the advantages of this product, including:

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 the athlete's interest in practicing because there are several variations of the defense system, so that the training process does not run monotonously and boringly.
d. This defense system model can be used as a reference for coaches to support the futsal defense training process during practice.
e. Contribution to education, especially in the field of futsal

3. Product Limitations

This research was carried out by the researcher as perfectly as possible according to the abilities of the researcher, but if in this research there are still many things that the researcher

must admit and put forward. These limitations are as follows:

a. When researchers conduct field trials, it should be carried out on a larger scope.
b. The facilities and infrastructure used are inadequate and still limited.
c. The products made are still far from perfect.
d. The explanation given to the defense system is still not perfect.

CONCLUSION

Based on data that researchers obtained from field test results and research discussions it could conclude that:

1. The futsal defense system model for ages 15-17 produces 10 model items and can be applied for ages 15-17 years old.
2. The model of the futsal defense system for age 15 -17 years old is effective for developing a futsal defense system.

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