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Development of Sepak Takraw Model Through TGFU to Improve Student Football in Playing Sepak Takraw

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Abstract: This study aims to: (1) to develop a learning model of sepak takraw material according to students' characteristics, (2) to measure the effectiveness of packing models that have been developed (3) to test the effectiveness of learning models that have been developed to improve students' soccer skills. This research is a research and development consisting of two stages. They are the preliminary stage and development stage. The primary phase consisted of observation and field study. The development stage consisted of initial drafting, expert validation, small-scale trials, large-scale trials, the final products, and effectiveness tests. Expert validation involved two experts with Delphi techniques. Field test design used times series design. Techniques using to collect the data were observation and interview. Data analysis to determine validity used Content Validity Ratio (CVR). Data analysis for effectiveness used Sample Paired t-Test. The results of the development learning of sepak takraw were (1) the product of the learning model sepak takraw for penjaskes student, (2) the implementation of a safe learning model, easy and fun to do, and (3) the product is effective to improve the skills of sepak takraw penjaskes students from affective, cognitive and psychomotor values. The results of expert assessment of the model product development had a validation value of 1 entered in the eligible category. The result of analysis of the three values got the result of significance of Sig2 tiled <0.5., And the mean ineffectiveness test of affective value is 2.8000 had increased to 3.6400. The mean at effectivity test of cognitive value 2.8400 had risen to 3.5600, the standard at the test of effectivity psychomotor value of 6.6000 had increased to 7.5200. So it can be concluded that the model was effective in improving the skills of penjaskes students.

Keywords: model, learning of sepak takraw, Teaching Games for Understanding, sepak sila, penjaskes student.

通過 TGFU 開發藤球模型以提高學生踢藤球足球的能力

摘要：本研究的目的是：(1) 根據學生的特點開發藤球材料的學習模型，(2) 衡量已開發的包裝模型的有效性 (3) 測試已開發的學習模型的有效性。旨在提高學生的足球技能。本研究是一個由兩個階段組成的研究和開發，它們是：初步階段和發展階段。初步階段包括：觀察和實地考察。開發階段包括：初步起草、專家驗證、小規模試驗、大規模試驗、最終產品和有效性測試。專家驗證涉及 2 位具有德爾福技術的專家。現場試驗設計採用時間序列設計。用於收集數據的技術是觀察和訪談。使用內容有效性比 (虚拟现实) 進行數據分析以確定有效性。使用樣本配對 t 檢驗的有效性數據分析。藤球開發學習的結果是 (1) 藤球給彭賈斯克學生學習模型的產品，(2) 安全學習模型的實現，簡單有趣，(3) 該產品有效從情感、認知和心理運動價值觀提高藤球學生的技能。模型產品開發的專家評估結果驗證值為 1，進入合格類別。三個值的分析結果得到顯著性結果信號 2 平鋪 <0.5.，情感值有效性測試的平均值從 2.8000 增加到 3.6400，認知值有效性測試的平均值 2.8400 增加到 3.5600，6.6000 的有

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效性測試心理運動值的平均值已增加到 7.5200。因此可以得出結論，該模型對提高彭賈斯克學生的技能是有效的。

关键词：模型, 藤球學習, 教学游戏理解, 足球, 體育學生。

1. Introduction

Sepak takraw is one of the traditional sports in Indonesia. Takraw's current game of football that uses balls made of rattan and plastic (synthetic fiber). The ball is kicked from foot to foot, feeds the friend, and turns the ball off in the opponent's field. Before sepak takraw was known to the People of Indonesia, the area has developed a football game, namely the play of children in the region that uses balls made of rattan. At first, it did not have its own rules because, at that time, the player only tried to keep the ball from dying (falling to the ground), (2) showing their respective skills with variations in how to take the ball, (3) taking the ball quickly and directed. Some areas in Indonesia that are considered as the forerunner of the birth of sepak takraw, among others: Makassar (South Sulawesi), Minangkabau (West Sumatra), South Tapanuli (North Sumatra), Kandangan (South Kalimantan) [1, p. 3]. Sepak takraw turns out to contain the values of competition in demonstrating the excellence and proficiency of a person in playing the ball made of rattan. The player demonstrates his ability to play takraw balls by displaying dazzling skills to the audience.

Basic techniques and even acrobatics are displayed that amaze the audience. To play the rattan ball, players are required to master the basic methods of sepak takraw. The basic technique, according to Ucup Yusuf [1, p. 32-43], is (1) football sila, (2) horse football, (3) rhino football, (4) sepak cungkil, (5) heading, (6) memaha, (7) mendada, (8) treading, (9) sepak mula, (10) smash kedeng, (11) blocking. The dominant use of basic techniques in sepak takraw is football techniques. Sila football technique is essential because it can be said that football sila is the mother of the game of sepak takraw because the ball is played a lot using football, starting from the beginning of the game, controlling the ball to making points [2].

Football is to pack the ball using the inner legs. Basic football techniques are often used at the time of sepak takraw games. To play the rattan ball, players are required to master the basic methods of sepak takraw. The basic technique, according to Ucup Yusuf [1, p. 32-43], is (1) soccer, (2) horse football, (3) rhino football, (4) sepak cungkil, (5) heading, (6) memaha, (7) mendada, (8) treading, (9) sepak mula, (10) smash kedeng, (11) blocking. The dominant use of basic techniques in sepak takraw is football techniques. Sila football technique is essential because it can be said that football sila is the mother of the game of sepak

takraw because the ball is played a lot using football, starting from the beginning of the game, controlling the ball to making points [2]. Football is to pack the ball using the inner legs. Basic football techniques are often used at the time of sepak takraw games. To perform basic sepak takraw techniques, namely football, you need to focus and practice to improve your skills. Sepak takraw exercises can be done alone or in groups in their implementation. An educator or trainer needs understanding and creativity in their learning. Authors in paper [8] explained that physical education learning must be implemented creatively. Coaches and educators must also have learning methods or strategies in their delivery to perform basic techniques well. In addition to being required to be creative in teaching students to perform basic procedures of facilities and infrastructure is also important in their activities.

Based on the observations made by researchers on the learning and deepening of the sepak takraw conducted at Sriwijaya University, both educators and students faced several problems. The first problem faced by educators or coaches in the implementation of sepak takraw learning is the lack of understanding and creativity of educators or coaches in putting together a varied and exciting model of sepak takraw learning. The material presented by educators is always the same and does not change at each meeting. The second problem faced is that the teaching used by educators is less attractive, so that students feel bored. Learning that uses drill and command so that it is less appealing to students in learning. The third problem faced by coaches or educators, or coaches in the implementation of sepak takraw games is the lack of facilities and infrastructure that can support the learning process of sepak takraw. Takraw's lack of football caused many students to wait their turn in making their turn and limited field making the learning less effective. The fourth problem is the motivation and spirit of students lacking in learning sepak takraw. Students do not understand sepak takraw and play sepak takraw, which causes a lack of experience playing in learning, so the motivation that arises in the learners becomes less.

2. Literature Review

A learning model is a strategy or way performed by educators or a teacher to establish an effective learning process in students to achieve a goal that has been systematically designed. Each educator has reasons why it determines a particular attitude to learning. Learning must develop all potential students; all

potentials will develop if the student does not feel depressed or afraid. Therefore it is necessary to strive for the learning process to be enjoyable.

Joyce and Weil [12] claim that "the model of teaching is a model of learning, as we help students acquire information, ideas, skills, value, ways of thinking, and means of expressing themselves" [12, p. 7]. The teaching model is a learning model. The learning model can help students gain information, ideas, skills, grades, ways of thinking, and express themselves. So this model is significant to develop the potential of students or students for the learning process to run well.

The learning model must have a concept in every learning activity. For learning to occur actively, innovatively, creatively, effectively, and funnily, a suitable learning model must be used in every learning activity. The determination of the learning model to be used in learning activities should consider: (a) the objectives to be achieved, (b) the materials or learning materials, (c) the learners, and (d) other considerations of a non-technical nature.

TGFU (Teaching Games for Understanding) is a learning approach that is done by playing. TGFU focuses on learning in the form of play in its learning, not to dull the learning atmosphere. Butler [7, p. 1] says that Teaching Games for Understanding is a learner and game-centered approach to sport-related game learning with strong ties to a constructivist approach to learning. TGFU is a student-centered approach and gameplay for sports learning and has a strong relationship with a constructive approach to learning.

Based on the explanation that has been presented, it is necessary to research the learning model through TGFU that can improve students' football skills. Researchers took the initiative to conduct a study titled "Sepak takraw Learning Model Through TGFU To Improve Football Skills of Unsri Penjaskes Students."

3. Methods/Materials

This research is education research and development (R&D). Gall, Gall, & Borg [5] explain that research and development use research findings to design new procedures and products. Systematically tested in the field, evaluated, and refined until they meet specific criteria of the same element of effectiveness, quality, or standards [5, p.589-591].

The steps are adapted into (5) development research procedure design, namely (1) needs analysis, (2) product development stage, (3) conduct expert validation, (4) conduct field trials, (5) effectiveness test.

3.1. Product Trial Design

The trial's design in this study is a validity test of 2 experts using the Delphi technique. Delphi techniques are performed by submitting drafts to experts without

meeting one expert for an assessment and comment. Small-scale trials and large-scale trials are conducted by making revisions in the learning product evaluation process. Small-scale trials are performed first, and then large-scale trials are conducted. After completing validation, a small-scale test and a large-scale test will be achieved by working a quasi-experimental method with Time Series Design / pseudo experiment.

3.2. Test Subjects

The subject of the trial is the target of the use of this product is unsri penjaskes students. The subjects of small-scale trials came from achievement coaching students and for large-scale trials in this study using palembang class students. Effectiveness test using test subjects in indralaya class students.

3.3. Data Collection Techniques

Techniques and instruments of data collection in this study in the form of qualitative and quantitative data. Qualitative data types are obtained from interviews with lecturers and expert input on the model that has been created. Quantitative data obtained learning observation guidelines in the form of assessment sheets on the model that has been made.

3.4. Data Analysis

Data analysis techniques used in this study is a test data analysis technique using a Likert scale with the level of criteria counting questionnaire scale using ideal mean (M_i) and superior deviation standard (SD_i), with the formula:

Table 1 Questionnaire scale calculation [3]

Score Interval	Criterion
$M_i + 1.5 SD_i < x$	Excellent
$M_i \leq x < M_i + 1.5 SD_i$	Good
$M_i - 1.5 SD_i \leq x < M_i$	Good Enough
$x < M_i - 1.5 SD_i$	Less Good

Notes:

$M_i = 0.5 \times (\text{highest score} + \text{smallest score})$

$SD_i = 1/6 \times (\text{highest score} - \text{smallest score})$

M_i = Ideal Average Value

SD_i = Ideal Deviation Standard

x = Average Value obtained

CVR information:

n : number of panelists who answered "important or yes."

N : Total number of panelists

For data analysis techniques, effectiveness tests are conducted by pseudo-experimental methods. The effectiveness test result data is processed using SPSS 21 with Sample Paired t-Test. Sample Paires t-Test is undertaken to determine if there is a real difference.

Validation is done by providing an initial product draft of the learning model penjasorkes ball basket game materials, accompanied by a validation sheet for experts. A validation sheet is a questionnaire that contains aspects of the quality of the learning model and suggestions and comments from experts.

Validation results in the form of values for the quality aspects of the learning model by using the validity of the content (CVR) with assessments of "1" and "0". Here is the formula of the Content Validity Ratio [6, p. 47].

4. Results and Discussion

The learning model of sepak takraw through TGFU consists of 4 games. The games of the development are (1) tong target games, (2) xox football games, (3) futsal soccer games.

4.1. Tong Target Game Implementation

The goal of the game (1) is to improve the basic technical skills of sepak takraw, namely football, (2) improve the accuracy of the football, (3) improve the spirit of the competition and never give up. Equipment: sepak takraw balls, stopwatches, cones, and barrels.

The rules of the game are that students are grouped; each group contains 3-5 children. Each group is in part of one of takraw's football fields. Each competing group gets the most points. Each group must take turns doing football to the opponent's barrel. Every kick that goes into the opponent's barrel that has been provided gets 1 point. The group that receives the most score is the winner.

4.2. Implementation of Xox Football Games

The goal of the game (1) improving the basic techniques of sepak takraw is football, (2) Improving the accuracy of football, (3) Improving the cognition of the child, (4) Improving the spirit of competition and never giving up, (5) Improving confidence, communication, and cooperation. Equipment: sepak takraw ball, stopwatch, cone.

Student game rules are grouped. Each group contains 3-5 children. Each group stands behind 2-3 meters from the box that has been made. Each group took turns doing football into the box to form xox. Each group can take the opponent's territory to make a football into the opponent's chest. The group that gets xox the first time is the winner.

4.3. Implementation of Futsal Soccer Game

Game objectives (1) Training communication, cohesion, and group cooperation, (2) Training the current form of sepak takraw game, (3) Improving the basic techniques of sepak takraw, i.e., soccer sila, (4) Training mentally competing in the form of simple games. Sepak takraw equipment, futsal goal, and stopwatch.

Student game rules are grouped. Each group contains 4-6 children. Each group tries to insert the ball into the opposing group. The ball is played and executed using football techniques. All players are prohibited from crossing the goal line that has been created. The winner is the group that puts the most balls into the opponent's goal.

4.4. Expert Input Data

Inputs on sepak takraw learning model through TGFU from experts are presented in Table 2.

Table 2 Inputs on sepak takraw learning model through TGFU from experts

Expert	Input
Educators	<input type="checkbox"/> The selection of materials on each product must be adjusted to the student
Expert 1	<input type="checkbox"/> Steps in each game should be clarified
Expert 2	<input type="checkbox"/> Facilities and infrastructure must be safe for students.

4.5. Expert Input Data Analysis

The results of the assessment scale assessment given by experts / material experts on the product of sepak takraw learning model through TGFU include (1) tong target game, (2) xox game of sila football, (3) mini sila football game, (4) futsal sila football game is considered appropriate and feasible.

4.6. Small Scale Trial Data Analysis

In small-scale trials conducted aimed to know the implementation and results of assessment using sepak takraw learning model through TGFU. Educators conduct learning using the developed learning model. The data taken from this small-scale trial is the data of educators' assessment of the implementation of the development of sepak takraw learning model through TGFU. Quantitative assessment results from practitioners are converted to qualitative data, the criteria for calculating the scale of this questionnaire using ideal mean (Mi) and excellent deviation standard (SDi). Based on a small-scale test assessment table filled by educators on the development of the sepak takraw model through tgf to improve student football skills, a score of 38 was obtained. Thus, small-scale trial values are categorized as "excellent" because they belong to the $Mi + 1.5 SDi$ intervals < 38 .

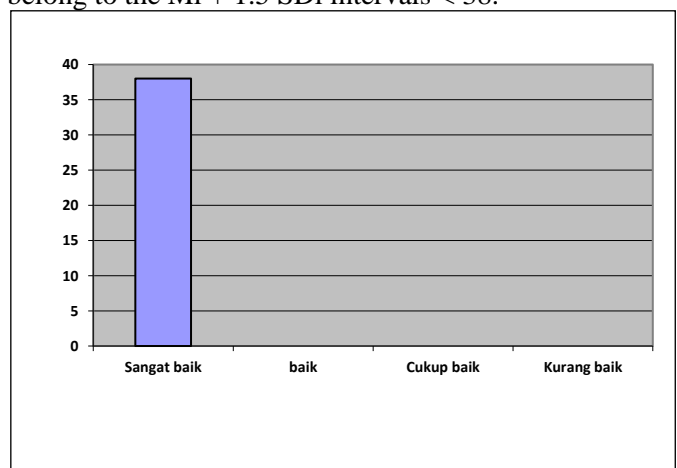


Fig. 1 Small scale trial results

Large-scale trials were conducted to know the implementation and results of assessments using sepak

takraw learning models through TGFU. Educators carry out learning using developed learning models. The data taken from this large-scale trial is the data of educators' assessment of the implementation of the development of sepak takraw learning model through TGFU. Quantitative assessment results from practitioners are converted to qualitative data, the criteria of calculation of the scale of this questionnaire using ideal mean (Mi) and excellent deviation standard (SDi), Based on a large-scale test assessment table filled by educators on the development of sepak takraw learning model through TGFU to improve student football skills, obtained a score of 78. Thus, small-scale trial values are categorized as "excellent" because they belong to the $Mi + 1.5 SDi$ intervals < 78 .

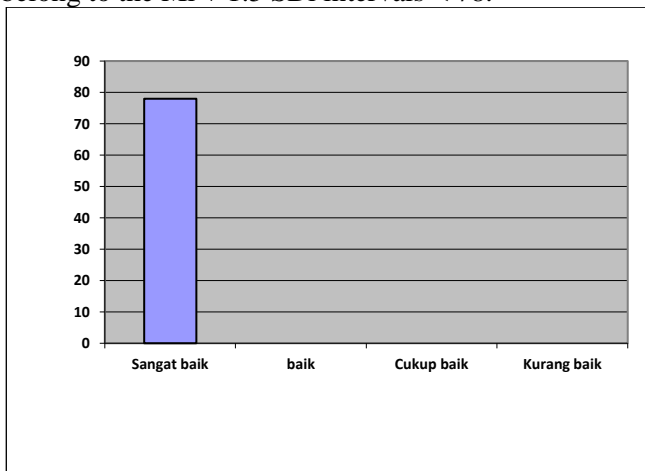


Fig. 2 Large-scale trial results

5. Conclusion

Based on the results of research and discussion on the final product study obtained concluded investigation, namely:

1. The management of the sepak takraw learning model through TGFU with expert assessment of CVR (Content Validity Ratio) = 1.
2. Implementation of effective learning models (easy, safe, and fun) for educators and students
3. Based on the effectiveness test of sepak takraw learning model through TGFU effective with $p > 0.05$ on every aspect of assessment and can be used in sepak takraw learning process.

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