

Development of basic futsal skills test instruments

Desarrollo de un instrumento de prueba de habilidades básicas de fútbol sala

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Abstract. The purpose of this study in general is to reveal the level of validity and reliability of the basic futsal skills test for U-23 futsal players. In particular, this study aims to reveal the level of validity and reliability of the futsal skills test for futsal players U-23 PORPROV Central Java. In the research that the authors did, researchers used research and development methods to produce certain products, and tested the effectiveness of these products to achieve goals (validation function). The sample was taken by purposive sampling because there were several criteria that were determined, namely, players in the U-23 category in each district throughout Central Java. The research results show a fairly high level of validity and reliability. It is necessary to revise the instrument to produce a better test in terms of reliability and validity in the development of an instrument model for testing the basic techniques of U-23 futsal.

Keywords: Development, Instruments, Futsal.

Resumen. El fútbol sala es uno de los deportes que ya es famoso en varios países. En el aprendizaje y la comprensión de varias técnicas básicas de fútbol sala, por supuesto, hay muchas modificaciones en un esfuerzo por mejorar el movimiento de las habilidades de fútbol sala, especialmente para los atletas de la clase amateur. El propósito de este estudio es, en general, analizar el nivel de validez y confiabilidad de la prueba de habilidades deportivas de fútbol sala de los jugadores de fútbol sala sub-23 en la Semana Provincial del Deporte de Java Central. En este estudio, el investigador utiliza métodos de investigación y desarrollo para producir un producto específico y prueba la efectividad del producto para lograr el objetivo (función de validación). La muestra se tomó mediante muestreo intencional porque se determinaron varios criterios, a saber, jugadores de la categoría Sub-23 en cada distrito de Java Central. Los resultados del estudio muestran un nivel bastante alto de validez y fiabilidad. Es necesario revisar el instrumento para producir una mejor prueba en términos de confiabilidad y validez en el desarrollo del modelo de instrumento de prueba de habilidad técnica básica de fútbol sala sub-23.

Palabras clave: desarrollo, Instrumentos, Habilidades Básicas, Fútbol Sala, Atletas.

Fecha recepción: 23-05-24. Fecha de aceptación: 29-07-24

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Introduction

Sport has an important role in human life. Participation in physical activity can result in a higher quality of life by reducing risk factors associated with unhealthy conditions and death (Bushman, Battista, Swan, Ransdell and Thompson, 2014: 6). Through sport, people can be formed who are physically and spiritually healthy and have high personality, discipline and sportsmanship so that in the end quality human beings will be formed. A reality that can be observed in the world of sports, shows a tendency for rapid increases in sporting achievements over time at regional, national and international levels. This can be seen from the record breaking that continues to be done in certain sports, effective and efficient technical performances reviewed by good physical condition.

Sport is a form of effort to improve the quality of Indonesian people which is directed at forming character and personality, high discipline and sportsmanship, as well as increasing achievements that can arouse a sense of national pride. Sports activities include various branches such as futsal, football, athletics, games, water sports, martial arts, and others. Sports science is an applied science that crosses disciplines between related and relevant sciences, so in the implementation of sports coaching to achieve optimal or maximum performance, it needs to be

handled carefully, comprehensive and integrated.

Sport can form people who are physically and mentally healthy and have a disciplined character and in the end quality human beings will be formed. Therefore, the movement to promote sports and community exercise needs to be implemented more intensively in all corners of Indonesia. However, awareness of the importance of this movement has many big obstacles that need to be overcome to make people interested in playing sports, starting from lifestyle, current developments, and level of education, and so on. Nowadays, sport has received quite a lot of attention, both for improving human quality in terms of physical fitness and for achieving achievements, as stated by M. Sajoto (1988: 10) that there are four basic goals for humans doing sport today, namely: (a) those who doing sports for recreation, (b) educational purposes, (c) achieving a certain level of physical fitness, and (d) achieving certain achievement targets.

In sports that aim to achieve certain achievement targets. According to Soekatamsi (1992: 14) there are 4 main equipment that players must have, including: "(1) Technical development (skills), (2) Physical development (physical fitness), (3) Tactical development (mental, memory, intelligence), and (4) Maturation of champions". These elements are the foundation in football coaching. If these elements are inherent in each individual player,

playing football will be better and more correct and they will be able to achieve the highest possible achievements. For this reason, it is necessary to measure all the basic equipment of the player so that the coach is able to know the development of his students, especially in the sport of futsal.

Futsal is a sport that is similar to football, whereas in football there are usually eleven athletes, whereas in futsal only five athletes are required. Basically, these two sports have the same rules as football, only football uses a large field with grass on the floor. In contrast to futsal, this sport is often played indoors which has a much narrower diameter compared to a football field. Futsal is a variation of indoor football that is played by many people around the world. First, the lack of walls or boards that fully or partially delineate the play area. The court the size of a basketball court makes for a manageable sized setup for a team of five including a goalie. Futsal has very fast passing, and is the epitome of a team sport that still allows room for individual demonstrations of skill, tricks and feints. Futsal is a sport that uses a full range of techniques starting from passing, receiving the ball and scoring goals quickly. Nowhere are classic football techniques learned as quickly as in Futsal. This was scientifically proven by the University of Frankfurt at the end of 2006.

Futsal is quickly becoming popular among Indonesian people, because it has several advantages, namely:

1) futsal is very similar to football, as the most popular sport in Indonesia, futsal has been studied and understood how to play, even though there are differences in the rules, it is still at a stage that is not too complicated.

2) It doesn't require a large area of land, the difficulty that is often encountered in playing soccer is that soccer requires an average area of ± 7000 m², which is very difficult to find in urban and rural areas. Very different from futsal which only requires a quarter of the land for football.

3) There are not many players, making futsal a sport that does not require approval from many parties who may have their own activities. With a small number of players, the game can be played more often.

4) Possibility of loss is minimal. The futsal sports business looks promising, with not too much capital and minimal possibility of losses occurring, what's more, this business can be opened from morning to night, making many residents who have empty land convert it into a futsal field rental business.

5) Lots of competition. The popularity and interest of young people in this sport has made business people try to maintain the popularity of this sport, by frequently holding futsal competitions in various regions with attractive prizes of course.

Even though Futsal is becoming increasingly popular, the results of surveys (interviews, questionnaires and observations) that have been conducted with coaches, teachers, students and futsal sports activists show that there is no "tested" instrument for testing basic futsal skills (single test) in Indonesia. . Apart from that, complete books on this

sport are still difficult to find, especially those in Indonesian. The difficulty is made worse by the incomplete contents of the books because most of them do not contain material regarding basic skills tests, the contents of the books mostly consist of general knowledge about futsal and the applicable regulations. Some of the books and journals that are available and contain tests on the internet are in foreign languages and are difficult to apply in Indonesia because they require expensive equipment in some of their components, which means it is not possible to apply them to most futsal teams in Indonesia. This also has an impact on students who are very interested in researching futsal in areas who find it difficult to obtain data due to limited information regarding test guides. This happens often To measure technical ability in the game of futsal, one still adopts instruments from the football skills test because of the similarities in the games found in the two sports. This condition is exacerbated by the lack of standardization of futsal skills. However, something like this is not appropriate because the test for football is adjusted to the characteristics of the game, including: distance, time and level of difficulty must be in accordance with the actual game.

In creating a test or instrument, there are several criteria that must be followed, namely that the level of validity and reliability must first be tested (Marom and Fatkur, 2014). Because the researcher will create a skills test, test the validity of the test by correlating the test results with the combined score of the test items created (total score). Measuring the level of constancy of a test can be done using several methods, namely: test-retest technique, halving, equivalent measurement. This validity and reliability test is carried out from the test items created (total score). Measuring the level of constancy of a test can be done using several methods, namely: test-retest technique, halving and equivalent measurement.

Materials And Methods

The object of this research is testing the level of validity and reliability of futsal sports skills instruments. This research was carried out on PORPROV Central Java futsal players. In this research, the author used research and development methods to produce certain products, and tested the effectiveness of these products to achieve the goals (Sangadji and Sopiah, 2010: 103). The aim of this research is to develop an instrument model for testing the basic technical abilities of U-23 futsal.

In the implementation of compiling ability tests for research purposes are as follows: Determination of the aspects measured, description of the aspects measured, selection of test forms, compilation of questions, implementation of trials, analysis of trial results. And for validity testing through construct validity testing, content validity testing, and external validity testing, while for instrument reliability testing using test retest, equivalent, combined, internal consistency.

The data collection technique is carried out through 5

items of test instrument design which will be tested for the level of validity and reliability. The design items consist of; passing, dribbling, chipping, control and shooting. After an agreement has been reached between the researcher and each expert, the revised product design is then assessed again by the experts. The results of the assessment by experts are analyzed to determine acceptable expert validity, so that researchers can determine the initial product. Instructions for carrying out initial product tests to obtain data are as follows:

Model passing test

a. Objective: measure the components of ball passing accuracy.

b. Tools/facilities: 10 balls, black duct tape, 8 funnels, tape measure, form, scorekeeper, pen/pencil, whistle and stopwatch.

c. Officer :

- A counter who keeps score and keeper of the time as kicks cannot be longer than 3 seconds.

d. Implementation Instructions:

- The testee stands behind the kick line 4 meters from the nearest target cone, the distance between the target cones is 10 meters.

- On the "Yes" signal, the Testee kicks to the target cone area provided.

- Kicks are performed 5 times on the right and 5 times on the left foot

e. Scoring Method :

- 1 point is earned if the ball successfully passes 1 target area.

- A count of 2 points is earned if the ball successfully passes through 2 target areas.

- 3 points are earned if the ball successfully passes through 3 target areas.

- A count of 4 points is obtained if the ball successfully passes through 4 target areas.

An illustration of the test can be seen in the image below,

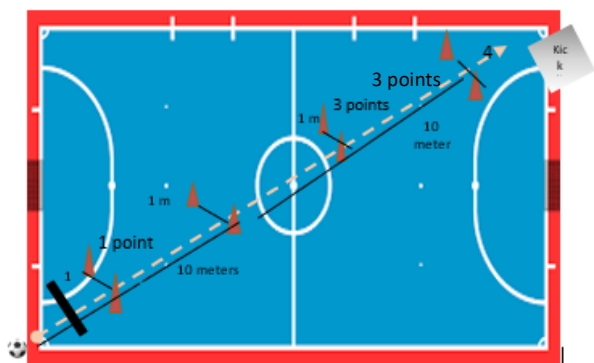


Figure 1.

Control test

Objective

measuring the components of ball control ability.

Tools/facilities

3 balls

Wall with

Officer

A time taker who gives the "Yes" and "Stop" signals.

A person counts the number of touches for 1 minute and simultaneously records the results

Implementation Instructions

- The testee is at a distance of 2 meters from the wall

- The testee must exercise control first and then kick the ball towards the wall.

- The bounce of the ball must be able to be controlled again and kicked again.

- The activity lasts for 1 minute.

- If the ball falls too far the player uses a spare ball.

Scoring Method

- A count of 1 is obtained if the player is able to kick and control.

- Not counted if during control, the supporting leg is in an area less than 2 meters

- The final result is the total score obtained during the performance in 60 seconds.

An illustration of the test can be seen in the image below.



Figure 2.

Dribbling test

Objective

Measuring the components of agility and speed in dribbling skills.

Tools/facilities

3 balls, 5 balls/sticks, meter, flat surface, chalk, score keeping form, ballpoint pen, whistle and stopwatch.

Officer

- A time taker as well as giving instructions.

- Someone pays attention and records the results.

d. Implementation Instructions:

- At the "Ready" signal, the Testee stands behind the starting line with the ball at his feet.

- At the "Yes" signal, the Testee starts to dribble the ball straight and through the obstacle in the middle, then to the

next obstacle according to the direction of the arrow that has been determined until it ends at the finish line.

- Wrong direction when dribbling the ball, the testee must correct it without using other body parts other than the feet where the mistake was made and the stopwatch continues to run.

- Dribbling is done by the dominant foot.

Scoring Method

- The time taken by the testee to dribble the ball from start to finish.

An illustration of the dribbling test can be seen in the picture below,

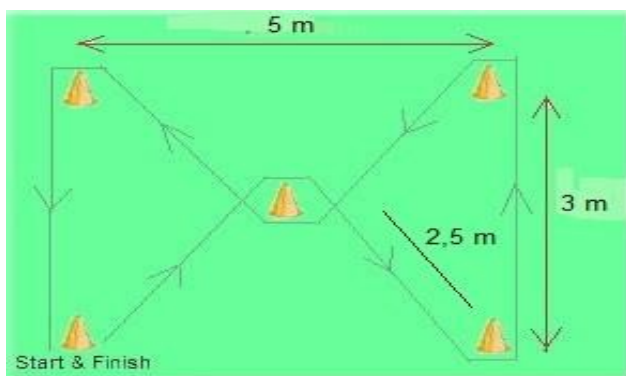


Figure 3.

Chipping test

Objective

measuring the components of accuracy in passing a high ball.

Tools/facilities

5 balls, circle area 5 meters in diameter, black duct tape, form. scorekeeper, pen/pencil, whistle and stopwatch.

Officer

- An official to record scores and correctness of movements

d. Implementation Instructions:

- The testee stands behind the shooting line, then the testee shoots soaring.
- The ball must pass through a barrier that is 2 meters high
- The place where the ball falls is the score obtained
- Do this activity alternating between the right and left feet 5 times each.

Scoring Method

- The place where the ball falls is the score recorded
- Balls that fall outside the target area and do not pass through the ropes do not count
- Balls that leave the target area are not counted

An illustration of the test can be seen in the image below,

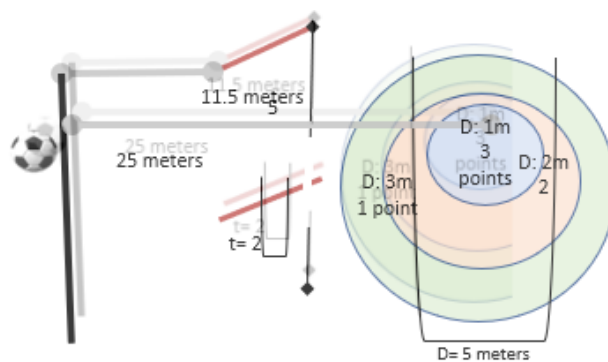


Figure 4.

Kicking the Ball into the Goal/Shooting Test

Goals

Measures skill, speed and accuracy of kicking the ball at the target.

Tools/facilities

10 balls, duct tape, measuring tape, 3 x 2 meter goal, small rope, score paper, whistle and stopwatch, form. Scorekeeper, pen/pencil.

Officer

- A time taker starts from foot contact with the ball until the ball passes through the goal.
- A person watches the ball enter the goal which has already been scored.
- A person records the results of the ball speed and the score obtained.

Implementation Instructions

- Testee stands behind the ball.
- The testee kicks the ball 5 times at a distance of 10 meters.
- Alternate kicks with the right and left legs, 5 kicks each.
- The kick speed must not be less than $60 \text{ km/h} = 10\text{m}/0.6\text{s}$

Scoring Method

- Time is counted from the time the foot touches the ball until the ball hits the target.
- If the ball from the kick hits the score separating rope in the goal, then the highest of the two scores is taken.
- If the testee kicks the ball outside the target, the ball's travel time is still counted but the score is 0 (zero).

An illustration of the test for kicking the ball into the goal can be seen in the image below.

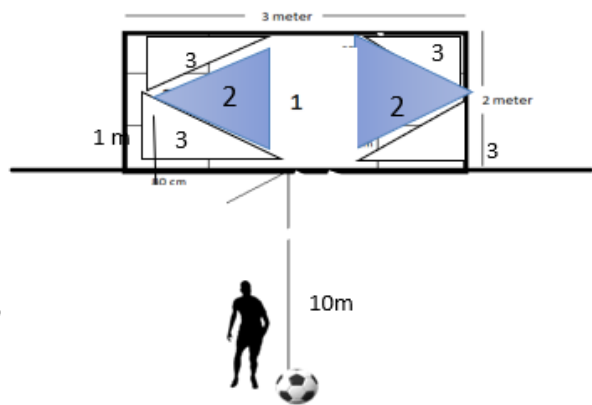


Figure 5

Data analysis uses validity and reliability level testing and develops norms with the following steps:

1. Determine the reliability of experimental test items using test retest.
2. Determine the validity of the experimental test items, namely correlating the test items with the criteria (combined score).
3. Determine the reliability of product tests using the formula *Coefficient Alpha*.
4. Develop norms with lsteps:
 - a) Looking for the highest number (AT)
 - b) Looking for the lowest number (AR)
 - c) Finding Range ($R=AT-AR$)
 - d) Looking for class interval (ki)
 - e) Determining interval (i)

$$i = \frac{R}{Ki}$$
 - f) Find the first number (I^c)

$$I^c = \frac{AR}{i}$$

Results And Discussion

After making improvements based on input and suggestions from expert validators, product trials are then carried out on a small and large scale. The following are the results obtained from product trials:

Small scale trials

Small scale trials were carried out on 2 PORPROV futsal teams with 15 players each aged 18-23 years, namely the Surakarta and Karanganyar Regency futsal teams. Before implementation, the sample was given instructions regarding the procedures for the skills test that would be developed, then the researcher provided an assessment sheet for the sample to fill in regarding the test that had been carried out. The results of product validity tests on a small scale for test passing, test control, test dribbling, chipping and shooting have a probability value of <0.05. These results can show that from small-scale trials, the initial product was declared to have high validity and reliability in the PORPROV Surakarta and Karanganyar Regency teams.

The results of the small scale validity and reliability tests can be seen in table 1 below.

Table 1. Validity and Reliability Test on a Small Scale

Test	Validity (R count)		Reliability Cronbach Alpha		P-value
	SKA	KRA	SKA	KRA	
Passing right	0.914	0.904	0.819	0.761	< 0.001
Passing left	0.927	0.916			
Control Test	0.974	0.841	0.806	0.943	< 0.001
Retest Control	0.972	0.971			
Dribbling test	0.898	0.968	0.937	0.893	<0.001
Dribbling Retest	0.979	0.964			
Chipping right	0.939	0.939	0.849	0.849	<0.001
Left chipping	0.927	0.927			
Shooting right	0.914	0.894	0.725	0.792	<0.05
Left shooting	0.927	0.899			

Description: SKA=Surakarta, KRA:Karanganyar

These results can show that from small-scale trials, the initial product was declared valid and reliable by the Karangnyar Regency PORPROV team. Based on the input considerations for the test being developed, it is tested on a larger scale which better reflects the product development targets.

Large scale trials

Large-scale trials were carried out by 90 players from 6 PORPROV teams, namely Banyumas Regency, Klaten Regency, Kebumen Regency, Kendal Regency, Kudus Regency and Jepara Regency, aged 18-23 years. Before implementation, the sample was given instructions regarding the procedures for the skills test that would be developed, then the researcher provided an assessment sheet to be filled out by the trainer regarding the test that had been carried out. The following are the results of a large-scale product trial assessment:

Table 2. Validity and Reliability Test on a Large Scale

Test	Validity (R count)	Reliability (Cronbach's Alpha)	P-value
Passing right	0.890	0.734	<0.001
Passing left	0.887		
Control Test	0.973	0.935	<0.001
Retest Control	0.967		
Dribbling test	0.995	0.990	<0.001
Dribbling Retest	0.995		
Chipping right	0.888	0.720	<0.001
Left chipping	0.881		
Shooting right	0.893	0.716	<0.001
Left shooting	0.872		

Results of product validity testing On a large scale for passing, control, dribbling, chipping and shooting tests, this kick has a probability value of <0.05. These results can show that the large-scale product trials were declared valid and reliable in the POMPROV team in Banyumas Regency, Klaten Regency, Kebumen Regency, Kendal Regency, Kudus Regency and Jepara Regency.

Determination of norm categorization

After testing the validity and reliability, categories of

tests were created based on the player test results obtained in large-scale trials. Based on the results of the shooting test scores, they can be categorized into 5 categories, namely; "Very little", "Not enough", "fair", "Good" and "Very good".

The majority of Banyumas Regency futsal club players' test shooting skills are quite good, namely 7 players, as well as 5 players from the Klaten Regency club, 9 players from the Kebumen Regency club, 7 players from the Kendal Regency club, 6 players from the Kudus Regency club and 6 players from the Jepara Regency club. as many as 7 players. Overall, the majority of large-scale futsal players in the shooting test still have less than 32 players.

The majority of Banyumas Regency futsal club players' chipping test skills are in the poor category, namely 7 players, the majority of Klaten Regency club players are very poor with 6 players, the majority of Kebumen Regency clubs are in the fair category with 6 players, likewise for the Kendal Regency club there are 6 players, the Kudus Regency club has 9 players and the Jepara Regency club has 5 players. Overall, the majority of large-scale futsal players in the chipping test still have sufficient norms, namely 33 players.

In the control test for large futsal players in Banyumas Regency, the majority had very good norms with 5 players, Klaten Regency had adequate and very good norms with 4 players each, Kebumen Regency had the majority of test control skills with good norms with 6 players, The majority of Kendal Regency has good test control skills, namely 5 players, while the majority of Kudus Regency player clubs have a norm of less than 5 players and Jepara Regency has a majority with good norms, namely 5 players. Overall, the majority of large-scale futsal players in the test control had good norms, namely 24 players.

The Dribbling Test for futsal players in Banyumas Regency has a majority of less than 4 players, in Klaten Regency the majority has enough of 8 players, in Kebumen Regency the majority has less than 5 players, in Kendal Regency the majority has less than 7 players, Kudus Regency has sufficient and good norms respectively. 4 players and the majority of Jepara Regency has a good norm, namely 6 players. Judging from the dribbling test norms as a whole, the majority of large-scale futsal playing teams have adequate norms in the dribbling test.

Comparison of Test Scores Between Small Scale and Large Scale

The comparison test in this research is to see the differences in shooting, chipping, passing, control and dribbling test scores that have been implemented with selected product trials.

In table 3, the shooting test score for PORPROV Surakarta players has a smaller mean value, namely 10.30, compared to the mean value for PORPROV Central Java players, namely 12.15 and has a p value = 0.012 < 0.05, which means there is a significant difference between PORPROV Surakarta players and players PORPROV Central Java. Meanwhile, the chipping test, passing test,

control test and dribbling test have a p value of > 0.05, which means there is no significant difference between PORPROV players and Central Java PORPROV players.

Table 3.

Test of Differences in Test Scores Between Small Scale and Large Scale

Test	Mean/Median		p-value
	SKA PORPROV	PORPROV Central Java	
Shooting	10.30	12.15	0.012*
Chipping	13.00	11.00	0.138
Passing	17.50	18.00	0.447
Controls	62.50	66.50	0.271
Dribbling	18.82	17.71	0.054

Description: *Significant.

Discussion of Research Results

Assessment The main elements of skills tests in U-23 futsal

Futsal is an indoor variation of football (Herman, 2011). Futsal is a team sport game that requires teamwork in a team. Apart from requiring the involvement of cooperation between individuals in a team, futsal is also a sport that has complex movement elements.

Futsal is a dynamic sport, where athletes are required to always move and require good technical skills and high determination. From a technical perspective, futsal skills are almost the same as grass fields, with the only basic difference being that futsal controls or holds the ball a lot using the sole of the foot, because the surface of the field is hard, athletes must hold the ball not far from their feet, if far from it. feet and with a smaller field size it will be easier for opposing athletes to seize the ball (Rasyd et al., 2019). In the world of sports, tests have the meaning of being a tool used to measure performance and to collect data. A test must be valid, which means it measures what it is supposed to measure and must be reliable, which means it can be repeated many times. A test is a tool used to obtain data from an object whose root is being measured (Narlan et al., 2017). According to Arikunto (2012: 67), a test is a tool or procedure used to find out or measure something in an atmosphere, with a predetermined method and rules. According to Uno (2012: 111), a test is a set of stimuli given to a person with the aim of getting answers which are the basis for determining a numerical score.

Mastery of technique is the main element in sport. Mastery of technique is a foundation for achieving optimal performance. Likewise in the game of futsal, to achieve achievements in the game of futsal, the main factor that must be developed is the element of basic technical skills in playing futsal. Basic techniques require strength, stamina, acceleration and fast and agile foot movements. Basically, basic futsal techniques are easy and simple components, and can be learned with practice. Further (Kustiawan, 2020) adding basic futsal techniques, namely Passing, which is one of the basic techniques of playing futsal which is really needed by every player. On a flat field and a small field size, hard and accurate passing is required because the ball slides parallel to the player's heel. This is because almost all futsal

games use passing. To master passing skills requires mastery of movements so that the desired target is achieved. The basic technique in control skills (holding the ball) must be to use the sole of the foot. With a flat field surface, the ball will roll quickly so the players must be able to control it well. If you hold the ball away from your feet, your opponent will easily seize the ball. Shooting is a basic technique that every player must master. This technique is a way to create goals. This is because all players have the opportunity to score goals and win the match or game. Dribbling technique is an important skill and absolutely must be mastered by every futsal player. Dribbling is the ability that every player has in controlling the ball before giving it to a friend to create opportunities to score goals. Control the ball and keep your distance from your opponent. This chipping skill is often used in futsal games to pass the ball behind the opponent or in situations where the opponent is defending one on one. This technique is almost the same as the passing technique. The difference lies in when chipping uses the top of the toe of the shoe and the impact is right under the ball.

U-23 Futsal Skills Test Construct

In the world of sports, tests have the meaning of being a tool used to measure performance and to collect data. A test must be valid, which means it measures what it is supposed to measure and must be reliable, which means it can be repeated many times.

Creating a test requires paying attention to several things so that the test can be useful for both individuals and groups in the world of education. This is a unity that can be used as a more complete discussion. Tests and measurements are very important because they can help diagnose the strengths and weaknesses of the players.

In the research, a validity test was carried out on the product for skill testing, each test will have 3 different test variations in order to find out which test best suits the player's characteristics. Suitability is based on the validity value and test reliability obtained from each type of test. Even though the results of trials carried out by experts produce appropriate validity assessments, they require input (suggestions) from the assessors. This suggestion is about one of the best validity values taken as a barometer in this research. Based on the validity test for passing model 2 of 0.915, test control model 3 of 0.885, test dribbling of model 1 of 0.901, test chipping of model 3 of 0.859 and test shooting of model 1 of 0.878. The validity values of the test are greater than 0.8, this shows that the Futsal Playing Skills Test is a good test, because the validity of the test content has been proven. According to Kubiszyn and Borich, (2010; 329) a good test must have sufficient evidence for validity, reliability, and accuracy for the purpose for which it is used and for the individual who uses it. In line with Kirkendal's (1987) opinion that test items should represent actual game skills (Strand and Wilson, 1993; 17).

A good test must have sufficient evidence for validity,

reliability, and accuracy for the purpose for which it is used and for the individual who uses it (Kubiszyn and Borich, 2010; 329). The Futsal Playing Skills Test can be classified as a good test, because it has proof of validity, reliability and accuracy according to PORPROV Surakarta players. Evidence of validity includes content validity and reliability by experts used to test the suitability of test equipment and proof of test reliability through repeated tests on PORPROV futsal players throughout Central Java, who are divided into two small groups and large groups.

Validity and Reliability of the U-23 futsal skills test instrument

After carrying out small group trials and revisions from validator input, the next step is to trial the basic futsal skills test measuring instrument in large groups with more samples compared to small group trials, this is one of the conditions for improving the product being developed. - develop and compile basic futsal skills test norms for each test item and overall norms for the test measuring instrument. The results of the research obtained validity which had been tested on a small scale and large scale on the PORPROV Surakarta and PORPROV Jateng teams showing valid and reliable results in both shooting, chipping, passing, control and dribbling tests.

The scales and instruments for measuring basic futsal skills can be said to have good validity, because these instruments carry out the function of measuring instruments and provide results that are in accordance with the aims and objectives of the measurement. This is in accordance with opinion Sudrajat (2000) "accuracy research tool for the concept being assessed so that it really assesses according to what is being assessed". This measuring tool can be used by coaches and other futsal sports players to measure players' basic skill levels periodically and can be used as an indicator in preparing training programs.

The results of the validity of the basic futsal skills test instrument data show that the designed measuring instrument is capable of measuring what you want to measure or is suitable for measuring the basic skill level of futsal players for ages 18-23 years in PORPROV Central Java. Based on the test results obtained, it can be shown that the measuring instrument constructed is trustworthy or reliable, the reliability of the measuring instrument is proven by two trials with the same sample and test model at different times and relatively consistent results are obtained, so it can be said that the instrument The measure is reliable and trustworthy. Reliability can be done externally and internally. External testing is carried out using test-retest (stability), equivalent, and a combination of the two (Sugiyono, 2010).

According to Mardapi (2012:108) Valid and reliable tests can produce accurate data. The cultivation of the use of standardized tests in sports needs to be promoted by using test equipment that meets standard research criteria. This is so that the test can truly describe the athlete's skills. Tests are important in sports activities. A test is suitable for

use if the test construction must meet the level of validity and reliability that meets the requirements and is in accordance with research principles. The results of this research have been proven to be a valid measuring tool for measuring differences in futsal playing skills for each player, so this test can be used as a research instrument.

Validity refers to the extent to which a test actually measures what it claims to measure (Miller, 2002; 56). A futsal test is said to be valid if it measures futsal skills. TKDO Futsal has content validity in the form of being able to be used to assess futsal skills. Related content validity is evidence of truth based on logical decision making and interpretation (Morrow, 2005; 95). The contents of TKDO Futsal are passing, control, dribbling, chipping and shooting, which are part of the skills that players always display during the match. Thus, based on logic, it can be interpreted that a futsal playing skills test must consist of skills *passing*, control, dribbling, chipping and shooting. Content validity depends on professional judgment using logic and comparison (Lacy, 2011; 85). Not just anyone can evaluate that logic, people have to be experts or professionals in the field. The experts as subjects in this research are futsal coaches and lecturers who have expertise in futsal or football.

U-23 Futsal Test Implementation Results

After testing the product, the results of research on shooting and passing tests on large-scale teams showed that PORPROV players had norm scores in the poor category. This means it is possible that the players are still not used to using the basic tests of the new product. Apart from that, it can be seen that during training, they rarely receive comprehensive training in basic futsal techniques, especially programmed shooting and passing exercises. Training is just playing without any emphasis on the techniques in futsal because training is an activity to improve skills by using various equipment according to the goals and needs of the sport. Futsal is a sport that is in great demand by everyone and there are many techniques that must be mastered, such as shooting passing, dribbling, *controls* and chipping. Shooting is a basic technique that must be mastered by all futsal players, this method is a way to score goals. Shooting is a basic technique that must be mastered by every player, this technique is a way to create goals, because all players can create goals to win the match or game. For this reason, shooting skills are very important in futsal games. Meanwhile passing is one of the basic techniques of playing futsal that is really needed by every player. On a flat field and a small field size, hard and accurate passing is required because the ball slides parallel to the player's heel. This is because almost all futsal games use passing. Baiting success is determined by quality (Fahmi et al., 2019).

In the chipping and dribbling test there is a sufficient norm value and the control test value is a good norm, hThis is probably because the players felt trained when they were given treatment by the researchers. According to (Justinus Lhaksana, 2012; 31) The basic technique in holding the ball

(control) must be to use the sole of the foot. With a flat field surface, the ball will roll quickly so the players must be able to control it well. If you hold the ball away from your feet, your opponent will easily win the ball. Meanwhile dribbling is an important skill and is absolutely mastered by every futsal player. Dribbling is the ability that every player has to control the ball and not give it to his friends to create opportunities to score goals. (Ekkry Siswandi, Yarmani, Santun Sihombing, 2018)

The results of the objectivity test are characteristics that are in accordance with the actual situation, by using a test the difference in test scores between the small group and the large group shows that the four tests, namely chipping, passing, control and dribbling, have no difference, only the shooting test has a difference between the small group and the group. big. It can be said that the product test used is quite objective. Sports skills tests are useful for measuring a person's mastery or skill in playing a sport by measuring basic techniques game (Suntoda, 2009; 15). Sports skills tests can also be used to group players and as a basis for assigning training grades. The implementation of sports skills tests can determine the level of success of players after receiving the training experience provided by trainer (Wahjoedi, 2001; 24)

The Usability And Precision Of The Instrument

The results of this studio are beneficial in the design of the product is the first prototype of the basic futsal sports skills test as a realization of the initial analysis, Expert review was conducted to provide considerations on the initial product design. Determination of validity used Spearman's correlation coefficient (ρ) and determining Reliability using Cronbach alpha correlation with a significance of $p < 0.05$, so that with the determination of validity this study can provide usefulness and precision and instruments. terms of validity and reliability of instruments that can be used for futsal desarrrollado. If you mention that you get a high level of validity and reliability on devices that are realized with special futsal equipment such as in a larger amplia range, which will return the usefulness and precision of the instrument.

Research Limitations

In this case, researchers have tried hard to fulfill everything required requirements, does not mean that this research does not have them limitations.

The limitations that exist in this research include:

1. The implementation of tests in large-scale tests is constrained by the facilities used, namely the ball bouncing area in the passing area of the test.
2. This research instrument still needs to be reviewed, because the indicators used as assessment items by experts are still not specific enough.
3. The application product being developed still requires other media support it, such as video viewing.

Conclusions And Recommendations

Conclusion

Based on the research results obtained, it can be concluded as follows:

- a. The forms of basic futsal skills tests constructed in this research include shooting, chipping, passing, control and dribbling tests.
- b. The basic futsal skills test measuring tool can be said to be a valid instrument for futsal players aged 18-23 years.
- c. The basic futsal skills instrument was declared reliable, reliability was measured from the correlation coefficient between small group trials stage 1 (test) and stage 2 (retest) showing a positive and significant correlation coefficient.
- d. The objectivity of the instrument through the mean difference test between a small group and a large group has no differences, so the measuring instrument can be said to be objective.

Suggestions

Suggestions based on the research results obtained can be formulated as follows:

- a. It is hoped that we can evaluate the measuring instruments from time to time.
- b. It is hoped that the Futsal Association can socialize the use of basic futsal skills testing tools at each club to assist coaches in evaluating the basic skill level of players.
- c. It is hoped that further research can be carried out with larger subjects and locations so that we can perfect the measuring tools that have been developed.

References

- Abdullah, A., and Manadji, A. 1994. Basics of Physical Education. Jakarta: Department of Education and Culture.
- Arikunto, S. 2009. Research Management. Yogyakarta: Rineka Cipta.
- Ashwadi. Research on the Development of the Futsal Sport Branch in Banda Aceh City 2007-2012. Student Scientific Journal of Physical Education, Health and Recreation. 2016;1(1): 38-44
- atlasofanatomy.com, accessed on November 13, 2020
- Bogdan and Taylor. 1993. Basics of Qualitative Research (Translation by A. Khuzin Afandi). Surabaya: National Enterprise.
- Bushman, Barbara A., Battista, R., Swan, P., Ransdell, L., and Thompson, Walter R. 2014. ACSM's Resources for The Personal Trainer. Fourth Edition. China: American College of Sports Medicine.
- Danang PD (2020). Sports tests and measurements. Magetan: CV. AE GRAPHIC MEDIA
- Giriwijoyo, S., Komariah, and Kartinah. 2005. Humans and Sport. Bandung: ITB Publishers.
- Gunarsa, Singgih D., and Yulia, Singgih D. 1996. Practical Psychology: Children, Adolescents and Families. First Printing. Jakarta: Mount Mulia.
- Hariyadi, Slamet, and Kotot, R. 2003. Basic Pencak Silat Tanding Techniques. Jakarta: PT. Dian Rakyat.
- Harsuki. 2003. Recent Sports Developments: Expert Studies. Jakarta: PT. Raja Grafinda Persada
- Isaac, Stephen., & Michael, William B. 1981. Handbook in Research and Evaluation. San diego: Edits Publishers.
- Johnson and Nelson. 1969. Measurement Evaluation in Physical Education, Fitness and Sport. London : Pentice Hall.
- Komarudin. (2016). Assessment of Physical Education and Sports Learning Outcomes. Bandung: PT. Rosdakarya Teenager.
- Lhaksana, J. 2012. Modern Futsal Tactics and Strategy. Jakarta: Be Champion.
- Lhaksana, J., and Pardosi, IH 2008. Inspiration and Spirit of Futsal. Jakarta: Achieve the Hope of Success
- Lutan, R. 2002. Towards Health and Fitness. Jakarta: Directorate General of Sports, DEPDIKNAS
- Maksum, A. 2009. Research Methodology in Sports. Surabaya: Faculty of Sports Science, Surabaya State University.
- Marom, Muh. Husnul and Fatkur Rohman. (2014). Psychological Condition of Futsal Players Who Have Experienced Injuries in the Tuban Regency Futsal Championship. Surabaya State University.
- Moleong, JL 2007. Qualitative Research Methodology. Bandung: PT. Rosdakarya Teenager
- Nurhasan and Abdul Narlan. (2004). Sports Education Tests and Measurements. Physical Education, Health and Recreation. Siliwangi University.
- PASI. 1993. Introduction to Training Theory. Jakarta. PASI ATHLETIC TRAINER EDUCATION PROGRAM & CERTIFICATION SYSTEM
- Sajoto, Mochamad. 1988. Physical Condition Development in Sports. Jakarta: Department of Education and Culture.
- Sugiyono. 2005. Understanding Qualitative Research. Bandung: Alfabeta
- Suharno, HP. 1993. Coaching Methodology. Yogyakarta: Yogyakarta State IKIP Press\
- Calm down, JD 2008. Proficient at playing Futsal. Bandung: PT. Mizan Bunaya Kretiva.
- Verducci, Frank M. 1980. Measurement Concepts in Physical Education. St. Louis: The CV Mosby Company.
- Winarno, M E. 2007. Research Methodology in Physical Education. Malang: Faculty of Education, State University of Malang
- Zuber-Skerritt. 1996. Introduction: New Directions in Action Research. Washington DC: The Falmer Press
- Ardianto, M. (2013). Development of Futsal Sports Skills Instruments. Education Series, 3(2), 241–247.
- Herman, V. (2011). Futsal Technique Tactics Training (B. Druck (ed.)). © 2011 by Meyer & Meyer Sport (UK) Ltd

- Jan van den Akker, Koeno Gravemeijer, & Nieveen, SM and N. (2006). About educational design research. In *Educational Design Research The Design, Development and Evaluation of Programs, Processes and Products*. <https://doi.org/10.4324/9781315105642-3>
- Kustiawan, AA (2020). *Futsal Basic Technical Innovations* (M. Press (ed.)). Modern Press.
- Liker, J. K. (2004). Harsuki. CWL Publishing Enterprises, Inc., Madison, 2004, 352. <http://onlinelibrary.wiley.com/doi/10.1002/cbdv.200490137/abstract>
- Narlan, A., Juniar, T., Millah, H., Jasmani, JP, & Teacher, F. (2017). Development of Futsal Sports Skills Instruments. 3(2), 241–247.
- Rasyd, H., Atiq, A., & Puspa Hidasari, F. (2019). Level of Basic Extracurricular Futsal Technique Skills at SMA Negeri 1 Galang, Sambas Regency. *Equatorial Journal of Education and Learning*, 8(10), 1–12. <https://journal.untan.ac.id/index.php/jpdpb/article/view/37425>.
- Reevers, S. M. and T. C. (2012). Conducting educational design research. In *Educational Media International*. <https://doi.org/10.1080/09523987.2013.843832>
- Morrow, et.al. (2005) *Measurement and evaluation in human performance*. Champaign IL: Human Kinetics.
- Wahjoedi. (2001). *Foundations of physical education evaluation*. Jakarta: Grafindo Persada.
- Mardapi, Djemari. (2012). *Yogyakarta education evaluation assessment measurements: Nuha Medika*.
- Fahmi, R., University, A., & Malang, N. (2019). Development of a Futsal Attacking Training Model Using a 3-1 Formation. 1(2), 110–115.
- Ekkry Siswandi, Yarmani, Santun Shombing D (2018) *The Influence of Distribution Technique Training Methods on Skills 2.*, 173-178.
- Lhaksana, Justinus. (2012). *Modern futsal tactics and strategy*. Jakarta: Be Champion.
- Sudrajat, et al (2000), *Education Statistics*, Library: Bandung.
- Sugiyono (2010). *Educational Research Methods Quantitative, Qualitative and R&D Approaches*. Bandung: Alfabeta.
- Kubiszyn, T., & Borich, GD2010. *Educational testing and measurement: classroom application and practice*. 9 th edition.
- Strand, B.N., and Wilson, R. 1993. *Assessing Sport Skills*. USA:Human Kinetics. Publishers Page 2.2.
- Sudrajat, et al (2000), *Education Statistics*, Library: Bandung.
- Miller.RL,Action,C.,Fullerton,DA&Maltby,J.2002.SPSS fpr Social Scientists.New York:Palgrave MacMillan.
- Lacy, AC 2011. *Measurement by the physical educator: why and how* (7 edition). McGraw-Hill Education.
- Andi Suntoda.S. 2009. *Tests, Measurement and Evaluation in Sports*. Bandung: FPOK UPI.
- Uno Hamzah. 2012. *Motivation Theory and Its Measurement*. Jakarta:Earth.Literature.
- Sangaji, Etta Mamang and Sopiah (2010) *Research Methodology Practical Approach in Research*. Yogyakarta CV.Andi Offset.
- Soekatamsi, *Permainan Bola Besar (Sepakbola)*, Jakarta: Depdikbud, *Proyek Peningkatan Mutu Guru SD Sistem-D2 dan Pendidikan kependidikan*, 1992
- Angler, V. H. (2011). *Futsal Technique, Tactics, Training by Vic Hermans Rainer Engler*. London: Meyer & Meyer Sport

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