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Badminton Court Agility Test

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Abstract

This research aims to study how the learning planning and implementation of Physical Education, Sports, and Health learning can be used as evaluation material to improve Physical Education, Sports, and Health learning in schools. This research is action research with qualitative and quantitative descriptive methods using models from Kemmis and Mc. Taggart consists of one cycle or a round of activities which include: -1) Planning (plan), (2) Action (action), (3) Observation (observing), (4) Reflection (reflecting), and planning revision will be carried out cycle. Data processing is done by reducing data, presenting data, and making conclusions. The study results indicate that the planning and implementation aspects of academic supervision improve performance in developing learning devices and on the implementation aspects. From the results of the study, there were the findings of teacher performance not following the action in the field, such as the brakes that still copied paste from fellow teachers, the facilities were inadequate and had sports outside the school because the school was still new and did not have sports facilities, the clock of the faded subjects in SMK only 2 hours of lessons run out on a trip from school to the sport. The conclusion in this study is that after being done through the filling of teacher performance appraisal instruments given to physical education teachers, it can be obtained from cycle I to cycle II the results of better teacher educators after being given assistance and supervision.

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INTRODUCTION

Badminton is a sport that has become a source of pride in the country thanks to the achievements of the athletes who have consistently contributed medals for Indonesia. There have been many international achievements that Indonesian athletes can achieve. Currently, men's doubles and mixed doubles are numbers that are often the mainstay in winning championships at international

championships. Kevin Sanjaya Sukamuljo/Marcus Fernaldi Gideon in the men's doubles, the number 1 pair in the world and Hendra Setiawan/Moch. Ahsan is ranked 2nd in the world. In the mixed doubles, Praveen Jordan/Melati is number 4 globally. In the women's doubles, the pair Greysia Polii/Apriyani Rahayu started to enliven the competition in the top 10 in the world.

Physical conditions are essential in supporting badminton games, including leg muscle strength, leg muscle power, flexibility, arm muscle power, balance and agility (Ferriyani et al., 2021; Karyono, 2016; Pramudeka Gustaman, 2019; Prayadi & Rachman, 2013). One of the essential physical conditions possessed by a badminton player is agility. According to (Harsono, 2018), agility is the ability to change the direction and position of the body quickly and precisely when moving, without losing balance and awareness of body position. In the badminton game, a player must move quickly to various field corners without losing balance and awareness of his body position. This agility needs to be possessed by athletes from an early age because of the demands of the game that must move quickly in all directions(Yuliawan & Sugiyanto, 2014; Ramadan, 2019).

Several tests commonly measure agility, such as the shuttle run and dodging run, but there is no specific way to measure badminton athletes' agility. As done by Sugiyanto and Hinda (2015) about the physical test model in finding badminton talent. In his research, an agility test is given from several forms of aptitude tests but does not measure specific aspects of agility physical conditions. In 2016 PP PBSI published a book of criteria and physical parameters for athletes entering national training and version 1. There is an agility test called the agility court. By the test procedure that must be carried out, this test is really by the characteristics of agility or foot movement in badminton. Some of these characteristics are: performed on the badminton court, movement in several directions, movement is done by stepping instead of running and done quickly.

Badminton is a sport that is the pride of the Indonesian nation because it is this sport that can win the Olympic gold medal, so this achievement must be maintained and improved in the future. There is a need for the participation of the community, educational institutions and badminton associations in the development and improvement of the quality of this sport so that badminton can become a culture and belong to the nation and become an example for other sports in Indonesia. One of the efforts to achieve this goal can be made by playing badminton, because the badminton game demands more individual abilities (individuals) in every match that is carried out, automatically, demands calm,

Aksan (2012)stated that badminton is "a racquet sport used by two people (for singles) or two pairs (for doubles) who take opposite positions in the field of the field divided by a net". One type of game in badminton is triple

(Triple), but PBSI has not yet approved this system. The badminton game aims to keep the shuttlecock from falling in its field and score points by attacking or returning the shuttlecock and falling in the opponent's area. This badminton game is carried out in two sets. However, if the result is a draw, the match will be repeated into three sets; between the first set and the second set, after the break, there is an exchange of places; at every point, eleven players take a break at the referee's instructions for 20 seconds. The player who wins is the player who first scores twenty-one points for the rally point game.

To play badminton well, a player must be able to master some basic badminton techniques**.** The first technique that badminton players must master is the grip technique. How to hold the racket correctly will affect the quality of the stroke made. The correct way to grip the racket is that the racket must be held using the fingers (finger space) with flexibility and relaxation but must remain powerful when hitting the shuttlecock. Avoid holding the racket with your palms (like holding a machete). Badminton players often use three gripping techniques: Forehand Grip, Backhand Grip, and Frying Pan Grip (Hughes & Cosgrove, 2006; Kusuma, 2019).

Furthermore, after mastery of holding a racket, the technique is the basic service technique. Service is the initial capital that badminton players must own. In other words, a player cannot get the point if he cannot serve well. The service technique is the earliest technique that should also be adequately mastered. Because the serve stroke, if done perfectly, will increase the potential for points. Meanwhile, when you cannot serve successfully, then, of course, you get free points. The following are several types of service techniques, including a) Forehand Service, which consists of 1) Forehand High Service, 2) Forehand Low Service, 3) Forehand Flick Service, and b) Backhand Service, which consists of 1) Short Service, 2) Flick Service.

Footwork technique or foot movement, badminton players, need to improve the agility of the position of the foot movement to the front, side and back (Al Farisi, 2018; Zemková & Hamar, 2014). This technique is also fundamental and vital for badminton players, so it is crucial to master it well. The purpose of this technique is so that the shuttlecock can be reached in any area swiftly when the opponent attacks. When the player is in the correct position, the attack can be made perfectly on the opponent by making a deadly blow. Moreover, even players will be able to counter attacks from opponents quickly and correctly if the footwork technique is mastered.

Benefits of agility, according to PP. PBVSI(Kusnadi & Hartadji, 2014; Fataha, 2021) direct use of agility is to: a) coordinate multiple movements. b) make it easier to practice high techniques, and c) movement can be efficient and effective. d) facilitate the power of orientation and anticipation of the opponent and the competitive environment. e) avoid injury. Furthermore (Badriah, 2013) explained that agility depends on factors:

strength, speed, explosive muscle power, reaction time, balance, and coordination of these factors. Other influencing factors are body type, age, gender, weight, and fatigue.

In game badminton, a player must be able to move in all directions of the badminton court quickly and precisely, chasing the shuttlecock placed by the opponent (Loureiro Jr et al., 2017; Phomsoupha et al., 2018). Front right and left, right and left side, back right and left are the directions of movement in badminton. The more agile a badminton player moves, the better the player is at controlling the field. The physical condition of agility must be introduced and trained early by playing various games requiring athletes to move quickly and change directions without losing balance and awareness of body position.

The test, in general, is a data collection tool and a basis for assessment in the educational process, in the form of tasks that students must do to produce values about behaviour. (Widiastuti, 2011). Educators or trainers can get the correct data with a test, especially in skills in exercising or measuring a person's physical fitness, by understanding the test. According to Narlan & Juniar(2020), a tool is used to obtain data or information about a particular individual or object.

According to Narlan & Juniar (2020), reasonable means valid or appropriate. In other words, it is said that the instrument is valid (legitimate) if the tool is sufficient to be measured or suitable for the stated purpose. A measuring scale or instrument can have high validity if the instrument performs its measuring function or provides measurement results for the measurement. Meanwhile, a test with low validity will produce data that is not relevant to the purpose of the measurement. Contained here is the notion that the accuracy of the validity of a measuring instrument depends on the ability of the measuring instrument to achieve the desired measurement objectives correctly.

A measuring instrument is said to be reliable if the instrument the measurer produces a genuinely reliable picture, the number of times the test is carried out with the same instrument and the same subject or object, the results are relatively the same or not much different (Narlan & Juniar, 2020). The measurement results must be reliable because they must have consistency and stability. In research, reliability is the extent to which the measurement of a test remains consistent after repeated tests on the subject and under the same conditions. Research is considered reliable when it provides consistent results for the exact measurement. Unreliable if repeated measurements give different results.

METHODS

This research is quantitative research with a descriptive method (Ramadan & Juniarti, 2020). The population of all badminton athletes from Tasikmalaya Regency and City. The researcher uses the sampling method as the purposive sampling technique, or the determination of the sample

with criteria (Creswell, 2012). The samples included 49 PBSI athletes in Tasikmalaya City and 54 PBSI athletes in Tasikmalaya Regency, ranging from 10 years to 18 years. The criteria set by the author are athletes who already have ID. PBSI, athletes who have practised for at least one year, and athletes included in the group of children to Adolescents.

The data collection technique in this study was using a test technique (Fraenkel et al., 2012; Sukmadinata, 2010). Researchers use the test technique, namely, determining the level of validity and reliability of the Agility Court test.

The research design is carried out mainly by obtaining data from a predetermined sample, namely:

1. Samples are collected according to each region.
2. The sample is given an Agility court test in advance according to a predetermined procedure.
3. Then, the sample is given another test (shuttle run) as a criterion for testing the validity.
4. The next day, the sample was given another Agility Court test to determine the level of reliability of the test.
5. The data that has been collected is analyzed using product-moment correlation analysis and then compared with the table of correlation coefficients.

By the data collection technique, the instrument uses an achievement test. Fraenkel & Wallen (2012) stated that "Achievement Tests. Achievement, or ability, tests measure an individual's knowledge or skill in a given area or subject". According to the statement, the researchers used an agility court test instrument and a 4x10 meter shuttle run test to measure the agility of badminton athletes.

Data analysis in testing the validity and reliability of the test uses Product Moment Correlation with IBM SPSS 26. Then the results are interpreted with an interpretation table of the level of validity and reliability.

FINDINGS AND DISCUSSION

Findings

The results of the research data analysis that researchers have carried out can be explained below. There are 49 PBSI athletes in Tasikmalaya City, 34 males and 15 females. Of the total number, they are divided into several age categories, including children, 15 people, Beginners, 16 people, Adolescents, 11 people and seven cadets.

Boys more dominate PBSI Tasikmalaya City athletes at the age of Adolescents. It can be seen that there are 14 male beginner athletes, while for the age category of children and adolescents, boys and girls are almost the same. In contrast to the age category of cadets, there are only seven male athletes.

Based on the result, it is explained that there are 54 PBSI athletes in Tasikmalaya Regency, consisting of 37 men and 17 women. Of the total number, they are divided into several age categories, including the category of 20 children, 14 beginners, 14 youths and six cadets.

PBSI athletes in Tasikmalaya Regency are more dominated by boys the age of Children (12) and Adolescents (12). Meanwhile, for the beginner age category, males and females are the same, which is seven people. Just like the PBSI City of Tasikmalaya, the age category of cadets for PBSI athletes in Tasikmalaya Regency is only male athletes, which are six people.

Testing the validity of the data is under the data analysis that has been submitted previously that the degree of test validity can be obtained from correlating the test with the criteria. The criteria referred to in this study are using an equivalent or existing test (Concurrent validity). Therefore, in this case, in determining the degree of validity of the Agility Court test, correlating the test results with the 4 x 10meter Shuttlerun test.

Table 1. PBSI Athlete Validity Results Tasikmalaya City

		Test 1 Agility Court	Shuttle run Test
Agility Court	Pearson Correlation	1	0.772**
	Sig. (2-tailed)		0.000
	N	49	49
Shuttle run Test	Pearson Correlation	0.772**	1
	Sig. (2-tailed)	0.000	
	N	49	49

**. Correlation is significant at the 0.05 level (2-tailed).

The results of the validity degree test based on Table 4 explain that the correlation coefficient between the agility court test and the shuttle run test is 0.772, including in the High category. Looking at the results, it is proven by the value of Sig. (2 tailed) is 0.00, which is smaller thanα0.05; this means the relationship is significant or valid. Thus, testing the validity of the Agility Court test for PBSI Tasikmalaya City athletes is declared valid and acceptable.

Table 2. PBSI Athlete Validity Results Tasikmalaya Regency

		Test 1 Agility Court	Shuttle run Test
Agility Court	Pearson Correlation	1	0.767**
	Sig. (2-tailed)		0.000
	N	54	54
Shuttle run Test	Pearson Correlation	0.767**	1
	Sig. (2-tailed)	0.000	
	N	54	54

**. Correlation is significant at the 0.05 level (2-tailed).

The results of the validity level test based on Table 4 explain that the correlation coefficient between the agility court test and the shuttle run test is 0.767, which is included in the High category. Looking at the results, it is proven by the value of Sig. (2 tailed) is 0.00, which is smaller thanα0.05; this means the relationship is significant or valid. Thus,

testing the validity of the Agility Court test for PBSI athletes in Tasikmalaya Regency is declared valid and acceptable.

In addition to the validity test, in analyzing the research data, a test of the degree of reliability of an Agility Court test is also carried out by what has been conveyed on the research instrument, namely conducting the same test (Test-Restest) twice in a row with different times, which is carried out on the next day. Day after doing the test, then correlate it using the product-moment.

Table 6. PBSI Athlete Reliability Test Results Tasikmalaya City

		Test 1 Agility Court	Test 2 Agility Court
Test 1 Agility Court	Pearson Correlation	1	0.921**
	Sig. (2-tailed)		0.000
	N	49	49
Test 2 Agility Court	Pearson Correlation	0.921**	1
	Sig. (2-tailed)	0.000	
	N	49	49

**. Correlation is significant at the 0.05 level (2-tailed).

The results of the reliability level test based on Table 6 explain that the correlation coefficient between test 1 and test 2 is 0.921, including in the High category. Looking at the results, it is proven by the value of Sig. (2 tailed) is 0.00, smaller than 0.05; the relationship is significant or reliable. Thus, the reliability test of the Agility court test for the PBSI Tasikmalaya City athletes was declared reliable and acceptable.

Table 8. PBSI Athlete Reliability Test Results Tasikmalaya Regency

		Test 1 Agility Court	Test 2 Agility Court
Test 1 Agility Court	Pearson Correlation	1	0.939**
	Sig. (2-tailed)		0.000
	N	54	54
Test 2 Agility Court	Pearson Correlation	0.939**	1
	Sig. (2-tailed)	0.000	
	N	54	54

**. Correlation is significant at the 0.05 level (2-tailed).

The results of the reliability level test based on Table 8 explain that the correlation coefficient between test 1 and test 2 is 0.939, including in the High category. Looking at the results, it is proven by the value of Sig. (2 tailed) is 0.00, which is smaller thanα0.05; this means the relationship is significant or reliable. Thus, the reliability testing of the Agility court test for PBSI athletes in Tasikmalaya Regency was declared reliable and acceptable.

Discussion

Based on the results of processing and analysis of research data, it is known that the degree of validity and reliability is in the high category. This provides clarity and evidence that the Agility Court test is genuinely relevant

to the characteristics of the sport of badminton with an unusual movement, namely stepping quickly and precisely in all directions of the badminton court.

By the test procedure that must be carried out, this test is really by the characteristics of agility or foot movement in badminton. Some of these characteristics are: where the test can be carried out on a badminton court or other field that is not slippery and safe, movement in several directions, movement is done by stepping instead of running and done quickly. However, This agility court test does not yet have the validity and reliability values needed for the reliability of a test. It can be used as a standard test instrument to measure the agility of badminton athletes (Ramadan, 2017). As stated by (Narlan et al., 2017; Reva etal., 2022), several criteria must be followed and tested first for validity and reliability in making a test or instrument.

The arranged test resembles an actual game where the tested person must move quickly forward straight, front left and right, right and left side, back straight, back right and left side. In addition, the movement of the legs in the test was carried out in a clockwise, anti-clockwise and accessible manner. The movements in this test will describe the ability of badminton's exceptional agility and physical condition. The results of this study strengthen several previous studies on the importance of agility and special test instruments for badminton characteristics.

Research conducted by (Edmizal & Soniawan, 2019; Kusuma et al., 2015) is modifying a badminton specific agile(Kusuma & Raharjo, n.d.)ty test using a badminton court and its movements resemble badminton games such as forward, right, left and back steps. This study aims to determine the validity and reliability of badminton specific agility tests. The population in this study were 182 people. The sampling technique used purposive sampling, so it was determined to be a sample of 100 people. Data collection for badminton specific agility tests, shuttle run tests, and retests from badminton specific agility tests were carried out by calculating the time. Test the validity of this study by correlating the results of the badminton specific agility test with the results of the shuttle run test, while the reliability test correlated the results of the badminton specific agility test with the results of the retest. Based on data analysis, the validity level of the Badminton Specific Agility Test is 0.78, which means very good, while the reliability level of the Badminton Specific Agility Test is 0.79, which means it is acceptable.

Sepdanius et al. (2019) conducted subsequent research on badminton footwork. Footwork in badminton is an essential basic technique mastered by badminton players. For this reason, coaches need to know the footwork abilities of each athlete. The footwork ability can be determined using a measuring instrument that has a valid and reliable assessment classification. Therefore, a study was conducted that aims to classify

footwork calculators as a footwork ability test instrument for badminton athletes that are valid and reliable(Frederick et al., 2020; Loureiro & de Freitas, 2016). The components of this footwork calculator consist of an android application, a stimulus device and a response device. This research was conducted in West Sumatra on professional and amateur badminton athletes. Samples were taken in the age range of 17-30 years. The sample criteria are to have efficient footwork in the badminton game so that the number of samples is 31 people. The data was collected with a footwork based android ability test and the instrument used by judgment. Criterion Validity is used to determine instrument validity, and Retest Reliability is used to determine instrument reliability. The results obtained that the instrument has an excellent validity value with r = 0.795. The instrument's reliability value is in the weak to good category with r = 0.699.

Although the results of this study are in line with expectations, there are still some limitations, namely, first, the sample at the age of 18 years or the female cadet group is still rarely active in clubs, so there is no data obtained from this study. Therefore, future studies are expected to focus more on the cadet age group samples or at 18 years and over. Second, the population area is still limited in the Tasikmalaya area. Future research is expected to expand the population area to the province or national level.

CONCLUSION

Based on the results of data analysis and discussion, the authors conclude that the badminton game agility court test is valid and reliable for the age of 10-18 years in the category of children to adolescents in the city and tasikmalaya regency areas. The agility court test can be used to measure the agility of badminton athletes in the context of athlete selection or planning training programs for coaches. The next researcher is expected to test the sample in a wider area, up to the national level, so that it can be applied to all athletes in the territory of indonesia.

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