

**Measurement of Futsal Physical Test on Students of Junior High School Country
Two North Indralaya Using Outdoor Laboratories in The Education Park****Arda^{1✉}, Hartati^{2✉}, Ahmad Richard Victorian³**Physical and Health Education, Faculty of Teacher Training and Education, Sriwijaya
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Abstract

Research Actual wellness is one of the states of being that should be claimed by everybody, in light of the fact that with a decent constitution can make individuals move well without encountering huge weariness. Good physical fitness is very important for junior high school students to perform well in both academic and extracurricular activities. because good physical fitness is required of every student. The physical health of futsal students at students junior high school country two north indralaya was the focus of this study. To perform at its best, one must be in excellent physical condition. The design of this study is descriptive and quantitative. Twenty futsal students from students junior high school country two north indralaya served as the study's participants. In this study, a 50 meter running test was used to measure speed, a bleep test was used to measure endurance, a sit-up test was used to measure abdominal muscle strength, a vertical jump test was used to measure explosive power, and a Agility t-Tst test was used to measure arm muscle strength. The descriptive presentation method of data analysis was used in this study. derived from the futsal physical test measurements of students at students junior high school country two north indralaya, which showed that two students (or ten percent) were in the very good category, nine students (or 45 percent) were in the good category, nine students (or 45 percent) were in the moderate category, and zero students (or zero percent) were in the less category or the very less category. The good category of nine students and the sufficient category of nine students produced the highest numbers of results. Therefore, it is possible to draw the conclusion that the physical average of futsal students junior high school country two north indralaya is satisfactory.

How to Cite

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INTRODUCTION

This sport is derived from the simpler sport of soccer. The size of the field and the ball used are smaller than soccer. Likewise, the rules of the game are different (Hamzah et al., 2018).

The American Collage of Sports Medicine (ASM) recommends cardiorespiratory and resistance training to improve physical fitness and health, flexibility training to maintain range of motion, neuromotor training, and various activities to maintain and improve physical function and reduce the risk of falls in the elderly (Garber et al., 2011)

Futsal athletes really need good quality physical condition, the basic components of physical condition such as: "Power, speed, strength, endurance, flexibility, agility, and coordination". All of these physical condition components are used in playing futsal, but there are several components that are more dominantly used in playing futsal and are very important components.

According to (Hartati et al., 2020) Exercise is a form of effort in improving the functional quality of the body's organs and the psychic of the perpetrator. Exercise planning must be structured with an exercise program that will serve as a guideline in its implementation. According to (Destriana et al., 2022) It is very important because it benefits the body such as the body feels better and can reduce the burden on the mind so that it feels better and happier. According to (Sulikan et al., 2020) Sports activities are one of the activities that are needed by everyone to maintain body fitness as a support for other activities such as in the demands of completing work so that it can be completed properly and on time.

According to learning observations, some pupils appear weary, whine, and lack enthusiasm when learning theory, and they appear rapidly exhausted when doing sports techniques. This is a sign of the kids' inadequate level of physical condition. The influence of students' low levels of physical activity and lack of rest time is suggested to be the cause of their poor level of physical fitness.

The findings of a study by Juniarsyah et al., (2019) Specifically, of the 18 players who took the physical condition test, 6 were found to be in the Fair category, with a percentage of 33.33 percent, 10 were found to be in the Lack category, with a percentage of 55.56 percent, and 2 were found to be Very Lack. According to Royana (2016)'s findings, Upgris futsal team players average a poor category speed of 4.75 seconds. The Upgris futsal team's average level of agility is considered to be good at 16.18 seconds. The Upgris futsal team's average level of leg muscle strength is considered to be good

at 85.96 kg. The typical degree of leg muscle hazardousness of Upgris futsal cooperative people is 243.89 cm in the medium classification. Upgris futsal team members average 39.71 VO2Max, which falls into the moderate category.

The formulation of research problems based on the background, problem identification and problem boundaries, the problem formulation in this study is "How is the measurement of futsal physical tests on students of junior high school country two north indralaya using outdoor laboratories in educational parks?".

This investigation used an outdoor laboratory at an educational park to ascertain the physical futsal test results of junior high school country two north indralaya pupils.

Hypotheses are conjectures or temporary answers to the formulation of research problems. The hypothesis in this study is as follows:

Ha: Identified futsal physical tests of junior high school country two north indralaya students using outdoor laboratories in the education park.

METHODS

Descriptive quantitative study is what we're doing here. Descriptive research, according to Nurmalasari & Erdiantoro (2020), is descriptive research that uses correct data to answer problems in an organized, cogent, and factual way. It seeks to explain and characterize existing situations. Descriptive research seeks to provide systematic, factual solutions to issues pertaining to the characteristics and facts of the population. The purpose of this study is to evaluate the physical preparedness of junior high school country two north indralaya futsal players.

A research instrument, is a device used to gauge the importance of the variables under investigation. Tests and measurements are the kind of tools that were employed in this investigation. Tests are instruments for measuring the abilities, knowledge, intellect, and skills that people possess.

The instruments / measuring instruments in this study were : 50 meter running speed, Bleep Endurance test, 30 second sit up test abdominal muscle strength, vertical jump test leg muscle explosiveness and Agility T-test arm muscle strength.

50 meter running speed

Objective: to measure the speed of futsal athletes. Equipment: running track, whistle, stop watch, chest number.

Implementation:

- a. the testee is ready to stand behind the starting line;
- b. with the signal "ready" the testee is ready to

- run with a standing start;
- c. with the signal "yes" the testee runs as fast as possible by covering a distance of 50 meters until crossing the finish line;
- d. running speed is calculated from the "yes" signal;
- e. time recording is carried out up to tenths of a second (0.1 seconds), if possible recorded, up to hundredths of a second (0.01 seconds);
- f. the testee is done twice, the runner does the next test after an interval of at least one runner. The best running speed is counted;
- g. the testee is declared a failure if he passes or crosses another track.

Assessment: record the results of the sprint run according to the time taken.

Table 1. 50 Meter Run Test Norms

Norms	Male
Very Good	3.58 - 3.91
Good	3.92 - 4.34
Fair	4.35 - 4.72
Less	4.73 - 5.11
Very poor	5.12 - 5.50

Bleep Endurance test

Purpose: to measure the athlete's endurance
 Tools: Flat track, Meter, Cassette and tape recorder, Cone, Stopwatch; Officer: Distance measurer, starting officer, track supervisor, scorekeeper;

Implementation:

- a. bleep test is done by running a distance of 20 m back and forth,
- b. which starts with a slow run gradually which gets faster and faster until the athlete is unable to keep up with the rhythm of running time,
- c. means his maximum ability at the alternating level.

Assessment: Record the results of running back and forth taken by students.

Table 2. Bleep Test Norms

(Male)	Age (year)					
	10 -14	15-19	20-29	30-39	40-49	50-59
Very Good	≥ 52	≥ 48	≥ 43	≥ 36	≥ 31	≥ 26
Good	46-51	42-47	37-42	31-35	26-30	22-25
Fair	41-45	38-41	33-36	27-30	22-25	18-21
less	35-40	33-47	29-32	22-26	17-21	13-17
Less poor	≤ 36	≤ 32	≤ 28	≤ 25	≤ 16	≤ 12

30 second sit up test abdominal muscle strength

Purpose: to measure the abdominal muscle strength of an athlete

Equipment: A flat floor can use a mat or carpet and two stopwatches, a partner to hold the feet and count.

Implementation:

- a. Lie down with knees bent, feet flat on the floor and hands folded across the chest.
- b. Start sit ups with your back on the floor.
- c. Raise yourself to a 90-degree position and return to the floor.
- d. Your feet can be held by your partner. Assessment: Record the number of sit-ups done for 60 seconds.

Table 3. 30-Second Sit-Up Test Norms

Norms	Male
Very Good	35 - on top
Good	27 – 34
Fair	19 – 26
Less	11 – 18
Very poor	downward – 11

Vertical jump test leg muscle explosiveness

Objective:

To measure leg explosive power (power) Equipment: Scale board, scale board eraser, chalk powder.

Implementation:

- a. The board is hung on the wall as high as the testee's reach.
- b. The testee is ready to stand under the scale board and the hand reaches as high as possible upwards and is attached to the scale board.
- c. Jumping does not use a prefix
- d. Previously the testee's hand was sprinkled with chalk powder, the testee was ready to stand under the scale board and the hand reached as high as possible up and attached to the scale board,.
- e. so that the former hand that was given chalk powder was read on the scale on the scale board (point A), after which the testee took the board hung on the wall as high as the testee's reach, Assessment: Value see on the tool. The best value is taken.

Table 4. Vertical Jump Test Norms

(Male)	Age (year)					
	12	13	14	15	16	
Very Good	20"	20"	20"	25"	25"	
Good	17"	17"	17"	23"	23"	
Fair	14"	14"	14"	19"	19"	
Less	11"	11"	11"	12"	12"	
Less Poor	5"	5"	5"	5"	5"	

Agility T-test arm muscle strength

Purpose: to measure the strength of the athlete's

arm muscles. Tools: carpet or flat floor, stop watch
Implementation:

- a. Participants lie on the carpet, after there are instructions the participants are welcome to adjust the most comfortable position when carrying out push ups
- b. take the distance in the hand position, place it on the floor with a wider distance. In this case, make sure the position of the thumb on the floor is straight with the chest. Position the fingers of the hand facing up and wide.
- c. The movement is counted if the participant at the time of lifting the body must pass through the bar and at the time of going down the arms must be straight.

Assessment: Record the number of push up movements for 60 seconds

Table 5. Agility T-test

Norms	Male
Very Good	35 - on top
Good	27 - 34
Fair	19 - 26
Less	11 - 18
Less Poor	downward - 11

The T (test) test, which comprises the distribution distribution test and the data normality test, was the analysis method employed by the researchers in this study. The goal of the data normality test, according to Ghozali (2016), variables in the regression model have a normal distribution. Using the coefficient of person formula and the curve slope test, it is possible to determine if the data are normally distributed;

$$k = \frac{x - m_0}{s}$$

Description :

- K = Curve slope
- x = On average
- m0 = Modes
- S = Deviation

The distribution distribution test obtained from each measurement item is the rough data from the results of each measurement obtained by students, then the rough results are converted into a T-score value. According to Sudijono (2015), the T-Score formula is as follows :

$$T = 10 \frac{(m-x)}{s} + 50 \text{ dan } T = 10 + \frac{(x-m)}{s} + 50$$

(inversion data) (regular data)

Description:

T = Score Value

M = Average value of rough data X = rough data values

SD = standard deviation of raw data

Once all the data has been gathered, the following step is to evaluate it so that conclusions about the research’s findings may be made. In this study, a percentage-based descriptive data analysis method is used to analyze the data. The following is the formula for calculating percentages :

$$P = \frac{F}{N} \times 100\%$$

Description:

P = Percentage sought (Relative Frequency) F = Frequency

N = Number of Respondents

RESULTS AND DISCUSSION

According to the results of the data normality test, performed with Km person, the slope value of the curve for the speed test data (50 m run) is (0.19), the slope value of the curve for the endurance test data (bleep test) is (-0.01), the slope value of the curve for the abdominal muscle strength test data (sit up) is (0.02), the slope value of the leg muscle explosive power test data curve (vertical jump) is (0.005), and the slope value of the (0.01). These numbers indicate that the data is regularly distributed, with a range of (-1) to (+1).

Speed test (50 Meter Run)

The 50-meter running speed test indicator’s data processing yielded data in the form of values. A table with the results of the 50-meter running test for junior high school country two north indralaya students is provided below. **Figure 1.** shows the outcomes of the 50-meter run.

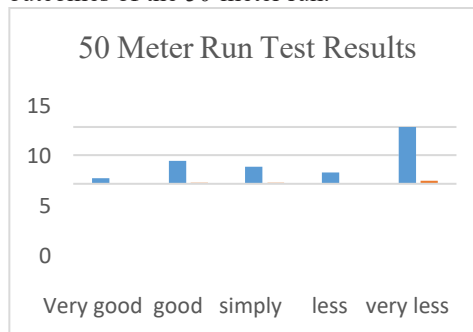


Figure 1. 50 meter dash diagram

When junior high school country two north indralaya students underwent a futsal physical test,

the results showed that one student scored in the excellent category, four students scored in the good category, three students scored in the sufficient category, two students scored in the less category, and ten students scored in the very poor category. Up to 10 pupils fall into the group of very little, which has the highest frequency.

Endurance Test (Bleep Test)

The results of data analysis from endurance indicators obtained data in the form of values. Below will be presented a table of physical measurement tests of futsal students of junior high school country two north indralaya in the endurance test. The results of the endurance test (Bleep test) are presented in **Figure 2**.



Figure 2. Endurance diagram (Bleep Test)

Junior high school country two north indralaya Utara students' physical test results were obtained. One student scored 5% in the excellent category, nine students scored 45% in the good category, one student scored 5% in the sufficient category, eight students scored 40% in the less category, and one student scored 5% in the very poor category. Nine pupils, who fall into the excellent group, have the highest frequency.

Abdominal Muscle Strength Test (Sit up)

The results of data analysis from indicators of abdominal muscle strength obtained data in the form of values. Below will be presented a table of physical measurement tests of futsal students of junior high school country two north indralaya in the sit up test. The results of the Abdominal Muscle Strength Test (Sit up) are presented in **Figure 3**.



Figure 3. Abdominal Muscle Strength diagram (Sit ups)

Four pupils made up 20% of the excellent category, eight made up 40% of the good category, six made up 30% of the adequate category, one made up 5% of the less category, and one made up 5% of the very less category, according to the results. Eight pupils fall into the good group, which has the highest frequency.

Limb Muscle Explosiveness Test (Vertical Jump)

The results of data analysis from indicators of leg muscle explosive power obtained data in the form of values. Below will be presented a table of physical measurement tests of futsal students of junior high school country two north indralaya in the Vertical jump test. The vertical jump results are presented in **Figure 4**.

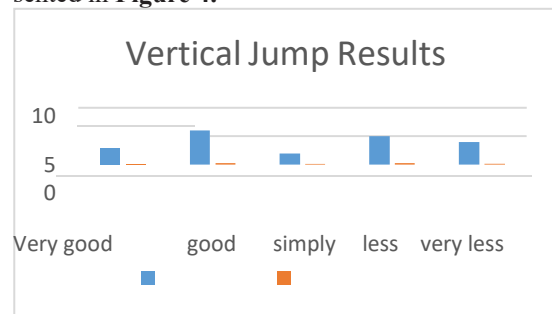


Figure 4. Limb Muscle Explosive Power Diagram (Vertical Jump)

Three students made up 15% of the excellent category, six students made up 30% of the good category, two students made up 10% of the adequate category, five students made up 25% of the less category, and four students made up 20% of the very less category, according to the findings. Six pupils, who fall within the excellent group, have the highest frequency.

Arm Muscle Strength Test (Agility T-Test)

The results of data analysis from the arm muscle strength indicator obtained data in the form of values. Below will be presented a table of physical measurement tests of futsal students of junior high school country two north indralaya in the Agility T- test. The results of the Arm Muscle Strength Test (Sit up) are presented in **Figure 5**.



Figure 5. Arm Muscle Strength (agility T-Test) Diagram

Futsal Physical Test Measurement Results

Based on the results of the entire series of tests which include 50 meter run, bleep test, 30 second sit up, vertical jump and Agility T-Test in accordance with the research tested. The results of the futsal physical test are presented in Figure 6. as follows,

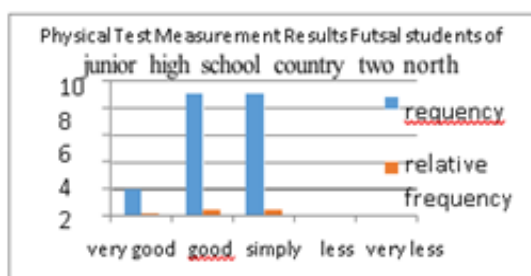


Figure 6. Diagram of Futsal Physical Test Measurement Results

The kids from junior high school country two north indralaya scored a total of 2 (10%) in the excellent category, 9 (45%) in the good category, 9 (45%) in the adequate category, 0 (0%) in the less category, and 0 (0%) in the very poor category on the futsal physical exam. Nine pupils get the most favorable outcomes, in the good group.

Based on the data from the measurement of speed carried out on students of junior high school country two north indralaya which was measured using a 50 meter running test, so that the results of the study showed that the level of speed in futsal students of junior high school country two north indralaya got an average of less than once. According to (Cahyo B et al., 2012) speed is the body's ability to direct all its systems to fight loads, distance and time so as to produce body movements in the shortest possible time. The cause of the lack of speed in students of junior high school country two north indralaya can be influenced by the lack of sprint running training and only focusing on technique and play.

Based on the data from the measurement of the endurance of junior high school country two north indralaya students measured through the bleep test, the results show that the average is good. According to (Warni et al., 2017) endurance is used during the match from the beginning to the end of the match, if a team has less endurance it will certainly have difficulty facing a team with good endurance. The cause of the lack of endurance in junior high school country two north indralaya students can be caused by the lack of exercises that can increase endurance such as jogging and others.

Based on the results of the abdominal muscle

strength test research using the sit up test instrument for 30 seconds, it was found that the average abdominal muscle strength of junior high school country two north indralaya students was in the good category. Abdominal muscle strength serves to keep the abdomen looking athletic. According to (Adityatama, 2017) the strength of the abdominal muscles that affect a person's appearance both in practicing skill movements and in appearance, the abdominal muscle strength if it is still not optimal and of course this affects the results. Therefore, after this research is held, it is hoped that players, and coaches must evaluate again so that in the future the strength of the abdominal muscles is maximized.

Based on the results of the research, the leg muscle explosive power test uses a vertical jump test instrument in accordance with the theory of (Sovenski et al., 2019). For the technical implementation of the technical implementation of the vertical jump is explained according to the opinion of Harsuki (2017), so that based on the research conducted, the results of leg muscle explosive power in North Indralaya State Junior High School students are on average good. According to (Ahmad Richard Victorian, 2018)

Power or often also called explosive power is a motion ability that is very important to support activities in every branch of sport, arguing that explosive power is the ability of muscles to direct strength quickly in a short time to provide the best momentum on the body or object in a complete explosive movement to achieve the desired goal. The cause of the lack of abdominal muscle strength is due to a lack of weight training.

Furthermore, based on the results of research on arm muscle strength using the push up test instrument for 30 seconds which is carried out in accordance with Harsuki's theory (2017) which explains the implementation of push ups so that the results of arm muscle strength of North Indralaya 2 State Junior High School students are obtained in the excellent category. According to (Hartati et al., 2018) the strength of the arm muscles most of the role is used by the goalkeeper. Less arm muscle strength is because the arm muscles are not ready to accept the load when competing.

CONCLUSION

Based on the study's findings, it can be deduced that 2 students (10%) scored in the excellent category, 9 students (45%) in the good category, 9 students (45%) in the sufficient category, 0 students (0%) in the less category, and 0 students (0%) in the very poor category for their physical test results at junior high school country two north indralaya.

Hence, it can be said that junior high school country two north indralaya students' average physical test results fall under the "excellent and sufficient" category.

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