

Development of Basketball Skills Test Based on Shooting Techniques for Sport Sciences Students

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Abstract— Basketball shooting skills test on the existing student and is often used inadequate again so it needs to be refurbished. This research was conducted with the aim of developing an evaluation tool, the new scale of assessment norms basketball shooting skills in students. The population in this study is students Unimed Nikken who are following courses of basketball and the students who have graduated, as well as a basketball player Unimed many as 200 students. Census sampling technique. How data retrieval techniques shooting test (free throw, jump shoot, shoot and lay up). Data were analyzed by the technique: Normality Test, frequency distribution with Chi Quadrat: Test the validity of the technical part and the total; Hoyt reliability test formula, Formulation score scale by using a T score with tables. While the preparation of assessment norms using the mean and standard deposits. The study concluded that: normality test data for all normal frequency distribution; Test the validity of the test free throw high of 0.77, 0.76 test shoot high jump, and shoot lay-up test of 0.70 is high. While the results of reliability test test free throw grains of 0.88 is very high, shoot jump test of 0.80 is very high and shoot lay-up test of 0.83 is very high. Had to development assessment norms basketball shooting tests, including tests each shooting (free throw, jump shoot, shoot and lay up).

Keywords: *instruments, test shooting, basketball*

I. INTRODUCTION

Teachers as educators must try to develop their competencies in order to achieve educational goals [1]. Physical education in its understanding is a process of education utilize physical activity to produce holistic changes in individual qualities, both in terms of physical, mental, and emotional. Education the body treats the child as a whole, total being, rather than just think of it as someone who is separate physical and quality mentally [2]. Schools are one place in shaping character [3]. On the other hand that training activities are a fundamental factor if you want to get the peak performance. This condition forces anyone who wishes to do performance training exercises to understand the training

procedures themselves in order to achieve the expected goals [4]. Education is a basic need of every human being to ensure his life to be more dignified [5]. Improving the quality of human resources is a serious problem from every country including Indonesia [6].

The fundamental problem experienced is shooting skills evaluation tools that exist today are generally applicable and tend to elite athletes, so it needs to be thought of making a suitable instrument for students. Additionally, the existing instrument to the demands of increasingly advanced game started inadequate. Therefore, there should be a study to develop an evaluation tool, scale scores and norms fresh assessment of the test shooting skills in the game of basketball to students. Based on these facts, it is necessary to research on "The Development of Basketball Shooting Skills Test For Student"

For the development of the measuring instrument had been described by Scriven that instrument or measuring instrument must first be calibrated before [7]. Further stated that essentially the same reliability with consistency for reliability [8]. Refers to the consistency *with the which a test measures whatever it, s measuring*, However, consistent measurement in education can be divided into three terms, namely: 1) the stability, consistency of the results of how many times the measurement, 2) alternate form, the consistency of the measurement results of two or more measuring devices, and 3) internal consistency, the consistency of grain question.

II. METHOD

The research was conducted at the Faculty of Sport Sciences, State University of Medan, in August s / d November 2019. Preparation of the samples tested in this study with the Phase I trial phase (pilot small stage) and phase II test (test use) Samples were taken courses basketball as many as 20 students. While the data came from students who have passed the advanced basketball as many as 180 people in 2017 and 2018, so the overall sample of 200 students. The method used in this research is the Research

and Development (R & D)[9]. The purpose of this development study resulted in a shooting test instrument products. Changes basketball shooting skills studied were composed of: (1) Free throw, (2), Jump shoot, and (3), Lay-up shoot.

The shape of the instrument and the unit of measurement is:

- Skills Free Throw, with free throw tests, performed behind the free throw line. Unit of measurement is the sum of the values obtained berdaskan ball into the ring for 1 minute.
- Shoot Jump skill, the jump test shoot, done outside the lines started dribbling from three-point range, then jump shoot in the area as far as the free throw line. Unit of measurement is the sum of the values obtained by the ball into the ring for 1 minute.
- Skills Lay Up Shoot, shoot the lay-up tests, carried out starting with dribbling from the outside of the three numbers, then lay up shoot, unit of measurement is obtained based on the value ball into the ring for 1 minute.

To analyze the data that has been collected using analytical techniques as follows:

- Normality test data with the frequency distribution Chi Square technique [10].
- Test the validity of the content validity, which s based on logical validity and statistical validity. Test the validity of the test items with a total engineering section [11]
- Reliability test instrument with Hoyt formula [11]
- Preparation of assessment norms by using mean and standard deposits. Conditions of acceptance and rejection at the 5% significance level

III. RESULTS AND DISCUSSION

From the results of tests conducted on all students in long jump athletes, using sensors on the long jump, it is very effective and can help the jury to see the success or not jumping every athlete. In addition, the sensor is also in accordance with advances in digital technology so that it is more relevant.

Data obtained from this study is a secondary data gathered from the results of a test of skill shooting since 2016 and 2019 consisting of three test items, namely: (1) Free Throw, (2) Jump Shoot, and (3) Lay Up shoot. The results of the data analysis are presented as follows:

- Overview summary of the minimum, maximum, mean and standard deviation of test result

TABLE. I. DESCRIPTION OF SHOOTING DATA

Type of Shoot	N	Min	Max	Mean	Standar Deviation
Free Throw	200	16	29	19,0900	1,98788
Jump Shoot	200	7	13	9,1300	1,22499
Lay Up Shoot	200	7	13	9,3850	1,27472

- Test normality frequency distribution data. It was from three forms of tests and data from each subject were all normal. Thus all the data is eligible to be processed. The summary of normality test results as follows:

TABLE. II. SUMMARY OF NORMALITY TEST RESULTS

Variables	db	Chi Square	P	Sig.	Information
Free Throw	9	9,400	0,200	0,05	Normal
Jump Shoot	5	3,940	0,210	0,05	Normal
Lay Up Shoot	6	4,940	0,198	0,05	Normal

- Test Validity Test Item

TABLE. III. SUMMARY OF TEST VALIDITY TEST ITEM

Variables	r _{xy}	r _{table}	Sig.	Information
Free Throw	0,770	0,138	0,000	Valid
Jump Shoot	0,760	0,138	0,005	Valid
Lay Up Shoot	0,700	0,138	0,000	Valid

- Test Reliability Instrumen

TABLE IV. SUMMARY OF TEST RELIABILITY TEST ITEM

Variables	The coefficient (Cronbach's alpha)	Information
Free Throw	0,88	Reliable
Jump Shoot	0,80	Reliable
Lay Up Shoot	0,83	Reliable

- Norma Basketball Shooting Skills

Based on the analysis on the data amount of a T score shooting skills earned the lowest score and 31 the highest score of 50, with a mean 37.6050000, and the standard deviation of 3.08489186. Based on these results can be compiled norm basketball shooting skills assessment as follows:

TABLE V. SKILLS ASSESSMENT NORMS BASKETBALL SHOOTING

Category	Code	Raw Score
Very good	A	> 42
Good	B	39-41
Moderate	C	36-38
Less	D	33-35
Ver less	E	< 32

To know assessment norms of each item basketball shooting skills test for students guided by the results that have been dipereoleh scale score. Summary of results as follows:

1) free Throw

Tests Free Throw is a free shot from behind the free throw line for 1 minute. Figures recorded is the number of balls into the ring. The results of the data analysis T scores on the test items free throw for the students obtained the lowest value and the highest value 29 16 19.0900 mean, and standard deviation

of 1.98788. Based on these results can be arranged free throw assessment norms as follows:

TABLE VI. NORMA RATE FREE THROW

Category	Code	Raw Score
Very good	A	> 22
Good	B	20-21
Moderate	C	18-19
Less	D	16-17
Ver less	E	< 15

2) *Jump Shoot*

Jump test shoot is standing behind the three-point shot line then dribbling the ball to the limit mark ditentutakan then melompatt then do the shooting. For 1 minute. Figures recorded is the number of balls into the ring, The results of data analysis on a T score shoot jump test items for students obtained the lowest value and the highest value 7 13 average 9.1300, and a standard deviation of 1.22499. Based on these results can be compiled norm shoot jump votes as follows:

TABLE VII. NORMA RATINGS JUMP SHOOT

Category	Code	Raw Score
Very good	A	> 13
Good	B	11-12
Moderate	C	9-10
Less	D	7-8
Ver less	E	< 6

3) *Lay Up Shoot*

Lay Up Shoot test is to stand behind the line of three-point shots, then dribbling followed-step jump up and down, shoot for 1 minute. Figures recorded is the number of balls into the ring. The results of the data analysis T scores on the test items Lay Up Shoot for the students obtained the lowest value and the highest value 7 13 average 9.3850, and a standard deviation of 1.27472. Based on these results can be compiled norm Lay Up Shoot ratings as follows:

TABLE VIII. ASSESSMENT NORMS LAY UP SHOOT

Category	Code	Raw Score
Very good	A	> 12
Good	B	10-11
Moderate	C	8-9
Less	D	6-7
Ver less	E	< 5

Therefore is a basketball shooting test instruments that have tested the validity and assesment. So that these tools can be used as a measuring tool to determine the basketball shooting skills for students.

Normality test results for the three types of tests (free throw, jump shoot and lay up shoot) is in the normal category.

The validity of the test instrument basketball shooting skills in students is valid and reliable.

Based on statistical calculation of the validity of the test instrument, known to have a high degree of positive correlation, so the instrument is valid and can be used to capture data on a wide scale. Based on analysis of these factors can be concluded that these instruments have a good construct validity, meaning that the instrument can be used to measure in accordance with defined symptoms.

Preparation of a scale score basketball shooting skills implemented by changing the rough numbers of each item into a score T. Further tests prepared an assessment norms based achievement test shooting skills by way of summing a T score of 3 samples of the tests performed. Based on the frequency distribution of the number of T score of each sample, grouped into "Very Good", "Good", "Medium", "Less" and "Less than once".

Preparation of assessment norms of the individual test items, Namely: Free Throw, Jump shoot, and lay up shoot.

IV. CONCLUSION

Test shooting skills with technical free throw is with the validity 0.77 and reliability of 0.88, Test shooting skills to shoot jump technique is the reliability of the validity of 0.76 to 0.80, Test shooting skills to shoot a lay-up technique is the reliability of the validity of 0.70 and 0.83. recommendation are:

- Students can train longer free throw shooting technique, jump shoot, as well as the lay-up shoot
- The other lecturers can develop test instrument for other sports.

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