8 (2) (2019) 77 - 81

Journal of Physical Education, Sport, Health and Recreations

http://journal.unnes.ac.id/sju/index.php/peshr

Contribution Power of Arm and Eye-Hand Coordination to Ability Throw Softball of Universitas Islam Riau

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Article History

Received 30 April 2019
Accepted 25 June 2019
Published June 2019

Keywords:
Arm Muscles; Coordination; Throws

Abstract

This study aims to determine the ability of a student throws a softball game physical education student of Universitas Islam Riau 2016/2017. Data collection methods used in this research is to use the test and measurement techniques. The test instrument in this study using a bicep strength test (push-ups), eye-hand coordination test and a test throws. The population in this study were physical education students of Universitas Islam Riau 2016/2017 forces who took a course softball. While samples taken in this study are all students. The sampling technique in this study using total sampling technique. Data analysis methods used were descriptive statistics, statistics is aimed at collecting data, presenting data and determine the value. Further data were understanding as our discussion of the issues addressed by the standard refers to the ability tosses in a softball game. Based on the results of research and discussion, it can be concluded as follows: there is a link arm muscle strength and hand-eye coordination to the results of throw inter-base student courses softball physical education students of Universitas Islam Riau 2016/2017 amounted to 12.46% with the count r = 0.353 and r 0.220 table while the excess of 87.54% influenced by other factors.

How to Cite

Makorohim, M. F., & Syaputra, A. (2019). Contribution Power of Arm and Eye-Hand Coordination to Ability Throw Softball of Universitas Islam Riau. *Journal of Physical Education, Sport, Health and Recreation.* 8(2), 77-81.

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p-ISSN 2460-724X
e-ISSN 2252-6773

INTRODUCTION

In the game of baseball some basic techniques that must be owned by players, namely throwing(throwing),catching the ball (catching),hit the ball(batting),a baseball player should be able to master the fifth of the basic techniques. Of the five elementary techniques are synonymous with the game of baseball is throwing, in doing throws a player must have some component of physical condition such as 1). Strength (muscle explosive power capability) 2). Flexibility (the ability to perform the movement joints in the joint space in maximum). 3) coordination to produce fast and accurate throws. Physical education, sports and health involve physical, mental, intellectual, emotional and social elements (Fransazel, 2016). Speci cally, for anaerobic power sports such as softball, lean body mass (LBM) plays an important role in pitching, throwing, hitting, and sprinting performance. In addition, determining how lean body mass (LBM) and fat mass (FM) are distributed in different body segments is important (Stanforth, 2014)

Softball first began in 1887 as an indoor sport at the Chicago Farragut Boat Club. Originally it was called kittenball, pumpkin ball, or mush ball (15,29). The term ''softball'' was coined subsequently in 1926 by W.A. Hakanson. Shortly afterward, the game moved outside, and in the 1930s, the national governing body, the Amateur Softball Association (ASA), was formed (15). Since then, the game has grown tremendously in popularity. Currently, both fast pitch and slow pitch softball are played competitively by athletes of both genders and various ages (Briskin, 2012).

The fast-pitch game is essentially a scaled-down version of baseball. The playing field is smaller, with the bases 60 ft apart as compared to 90 ft in baseball. The fundamental difference between the 2 sports is pitching. Instead of an elevated mound, a softball pitcher throws from a flat pitching Circle with an 8-ft radius from the pitching rubber. The distance from the pitching rubber to home plate also differs; it is 40 ft for youth softball as compared to 60 ft and 6 in for baseball. In terms of the reaction time of a batter, the game of fast pitch is directly comparable to that of baseball. A regulation softball has a circumference of 31 cm (12 in) and a higher mass (200 g) than does a regulation baseball, which has a circumference of 23 cm (9 in) and a mass of 146 g. Figure 1 depicts the windmill delivery style used in fast-pitch softball (Werner et al., 2005)

The observations support research conducted during the course of softball got some problems such as: students who follow courses softball has minimal knowledge about the game of softball. Though this game is similar to the game of baseball modifications that could be considered popular and frequently played in areas throughout Indonesia. However it may have been eroded by the advance of technology so the game is scarce and hard to find these days. The next problem is the low that researchers get the students' ability to do the actual throwing fishing is the most basic technique in a softball game. In doing throw, students are very often throw error a ball thrown which is often not the right target, and sometimes not until it this impact from low of eye-hand coordination. Although there is a growing body of work on eye– hand coordination (Crawford et al., 2004), little is known about the role of gaze in learning of visually guided manual tasks. Here, we examined eye– hand coordination during acquisition of a task that in most subjects required a period of exploratory behavior before improvement in performance occurred. The ortther problem is less flexible his students in playing the game of softball. Students look stiff and awkward and confused when they get the ball.

METHODS

This study use correlation method and was conducted over three months on October s / d in December 2017 in Riau Islamic University Soccer Field. The conduct of the tests performed on the Second week of November 2017 at 7:30 to 11:00 pm. Data collection methods used in this research is to use the test and measurement techniques. The test instrument in this study using the test arm muscle strength (Ismaryati, 2006: 124), Hand Eye Coordination Test (Arsil, 2010:106), an overhand throw accuracy (Arsil 2010 : 159). The Subyek this study is all of physical education students has been choice courses of softball 2016/2017.

RESULTS AND DISCUSSION

Based on the data that has been processed in this research is the correlation data arm muscle strength and hand-eye coordination to the results of throw inter-base physical education student of Universitas Islam 2016/2017. The description of the results of the measurement data from the test results between the arm muscle strength and hand-eye coordination as the independent variable and the results of throws between the base of the dependent variable is as follows:

Data test results muscle Strength arm Of The results throw the inter-base physical education students of Universitas Islam Riau 2016/2017

After Strength test muscle arm Softball physical education student of Universitas Islam Riau 2016/2017, that the highest value is 59 and the lowest value 6. Range (difference) is 53, the class interval is 7, the length of the class is 7, the mean (average) is 24.529 and standards deviation amounted to 47.271.

Based on the tests and measurements of 84 testee. There are 8 people or 10% of the respondents the range of 6 - 12. While the range of 13-19 there were 19 frequencies or 23% of the respondents. Furthermore, the range of 20-26 are 25 frequencies or 30% of the respondents, range 27-33 are 14 frequencies or 17% of the respondents, from the range of 34-40 are 16 frequencies or 19%, from the range of 41-47 there is one frequency or 1% and 48-59 there is one frequency or 1%.

Data Test Results Coordinating Eyes Hands Against The results throw the Inter-Base physical education students of Universitas Islam Riau 2016/2017.

After the Test Coordination Eyes Hands physical education student of Universitas Islam 2016/2017, that the highest value is 10 and the value 0. lowest Range (difference) is 10, the class interval is 7, the length of the class is 2, the mean (average) is 6.190 and the standard deviation is equal to 47.112.

Based on the tests and measurements of 84 testee. There are 6 frequency or 7% of the respondents the range of 0 - 1. While the range of 2-3 are 6 frequency or 7% of respondents. Furthermore, the range of 4-5 there are 19 frequencies or 23% of the respondents, the range of 6-7 are 22 frequencies or 26% of the respondents, from a range of 8-9 there are 26 frequencies or 31%, from the range of 10-11 are five frequencies or 6% and from the range of 12-13 are 0 frequency or 0%.

Data Results pitch Base physical education students of Universitas Islam Riau 2016/2017

After Hand Eye Coordination Test physical education student of Universitas Islam 2016/2017, that the highest value is 10 and the lowest value of 0. Range (difference) is 10, the class interval is 7, the length of the class is 2, the mean (average) is 6.190 and the standard deviation is equal to 47.112.

Based on the tests and measurements of 84 testee. There are 9 frequency or 11% of the respondents the range of 1 - 3, and the range of 4-6, there were 13 frequencies or 15% of the respondents. Furthermore, the range of 7-9 there are 24 frequencies or 29% of the respondents, the range of 10-12 there are 128 frequency or 33% of the respondents, from the range of 13-15 are 8 frequency or 10%, range 16-18 there are two frequencies, or 2%, and from the range of 19-21 are 0 frequency or 0%.

Testing Hypotheses Research

Based on the data obtained and analyzed, while the hypothesis will be tested:

Research Hypothesis contributions muscle power arm on the results of throws between the base of physical education student of Universitas Islam 2016/2017.

Then used the correlation formula "r" in product moment (r xy) indicates the count r = 0.0041. R count value is then compared with the value of r table. Having seen in the table r table values obtained in N by 84 is 0.220. Values obtained that r r r table or count $\leq 0.041 \leq 0.220$ alternattif means hypothesis is rejected. We can conclude that there is a contribution to the arm muscle strength between the results of throws base of physical education student of Universitas Islam 2016/2017 which belong to the category of very low.

Research hypothesis testing hand-eye coordination contributed to the results of throw inter-base physical education student of Universitas Islam 2016/2017

then used the correlation formula "r" on the product moment (r xy) indicates the count r = 0.349. R count value is then compared with the value of r table. Having seen in the table r table values obtained in N by 84 is 0.220. R values were obtained that: r arithmetic $\geq r \geq 0.349$ 0.220 table or alternattif hypothesis accepted meaning. It can be concluded there is kontriibusi arm muscle strength against the results of throw inter-base physical education student of Universitas Islam 2016/2017 were classified in the category.

Research hypothesis Contributing arm muscle strength and hand-eye coordination to the results of inter-base throw

Then use the correlation formula "r" on the product moment (r xy) shows the "r" count = 0.353. R count value is then compared with the value of r table. Having seen the value obtained

in the table r n by 84 is = 0.220. Values count r and r table shows that: r arithmetic ≥ r table or 0.353 ≥ 0.220. With the count r ≥ r table then there is a link arm muscle strength and hand-eye coordination to the results of throw inter-base physical education student of Universitas Islam 2016/2017 were classified in the low category.

To determine the value of the contribution we used the formula KD = R^2x 100% so that it is known that the value of the contribution of the arm muscle strength and hand-eye coordination to the results of throw inter-base physical education student of Universitas Islam 2016/2017amounted to 12.460%.

Based on the hypothesis testing showed that: there is a contribution of muscle strength of arm and hand eye coordination to the results of throws between the base of the physical education student of Universitas Islam 2016/2017, using the techniques of statistical analysis in which the count r = 0.353 above a significant level with r table = 0.220. So construed count r ≥ r table belonging to the lower category.

Contribution to the arm muscle strength between the results of throws base of physical education student of Universitas Islam 2016/2017

Strength is the ability to move a mass (the body itself, the opponent, tools) and also to cope with a load via a muscle work. Strength is the ability of nerve muscle to overcome internal and external load and power can be defined physiologically and physicalists, (Syafruddin, 2013: 71). Meanwhile, according Dell (1993: 29) Throw the ball is a technique and skill that is absolutely controlled by a player or someone who wants to play softball, which also involves the good arm muscle strength.

Strength is also one of the components of physical condition that must be owned by a person, because of a physical condition is very influential in the field of sport, including in the sport of softball.So it is clear to us that the strength needed in most physical activities. Every sport requires strength. How large and how much strength and type of force where necessary depending on the branch sport.

From the above results indicate that the arm muscle strength between theof the results throws base get r calculated at 0.041 and 0.220 with r table at a very low level of relationship.

Hand-eye coordination contributed to the results of throw inter-base physical education student of Universitas Islam 2016/2017

Coordination is also very important in sports. If an athlete has a good coordination so doing throw in agame, softball for example, will produce a good throw. Coordination is one of the elements essential to learn and master the skills in sports. Coordination is one element of the physical conditions that are relatively difficult to be defined precisely because its function is associated with elements of the physical condition of the other and is determined by the ability of the system.

Ismaryati (2008: 53) coordination is defined as the harmonious relationship of mutual influence relationship between muscle groups during the work, which is shown by the various levels of skill. Coordination is difficult to be separated with agility, so that sometimes a coordination test also aims to measure agility.

From the above results indicate that the hand-eye coordination to the results of throw inter-base obtain r calculated at 0.349 and r table at .220 with a moderate level of relationship.

Contributions strength of arm muscles and hand-eye coordination to the results of throws between the base

There are several factors that influence the outcome of the toss between base that need attention, such as technical training that emphasizes the perfection of basic engineering as a whole which aims to develop the habit mototrik, so the strength, speed and master lapngan. Stamina training in order to produce energy and good movement at the time of pulling the hand that will be used to throw and catch. Peguasaan good technique will be able to save and optimize the use of physical condition. That means a good mastery of technique will be able to save energy. This means the better mastery of the technique it will be the better the result throws made.

From the description above shows that the contribution of the arm muscle strength and hand-eye coordination to the results of throw inter-base physical education student of Universitas Islam 2016/2017 amounted to 0.353 or 12.46%. In addition to the arm muscle strength and hand-eye coordination there are several other factors that influence amounted to 87.54% throw inter-base results:

According Widiastuti (100: 2011) Power or frequently mentioned explosive power is a very important motion capabilities to support the activities at each branch Sports. Furthermore, according to Ismaryati (101: 2008) said dynamic flexibility is the ability to use the joints and muscles

continuously in space filled quickly and without resistance movement. Furthermore Ismaryati (48: 2008) says that a dynamic balance is the ability to maintain a state of balance in motion, such as running, walking, soared and so on. "The assessment of body composition in athletes enables coaches to evaluate their training programs and make adjustments throughout the year to impact performance" (Peart, Wadsworth, Washington, & Oliver, 2018).

CONCLUSION

Based on the results of research and discussion in Discussion, it can be concluded as follows: there is a link arm muscle strength and hand-eye coordination to the results of throw inter-base studentcourses softball physical education student of Riau Islamic University in 2017 amounted to 12.46% by r count = 0.353 and r table while the excess of 0.220.

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