Effectiveness of Training Methods on Shot Put Athletic Learning Results

Andi Muhammad Fadlih *[1], Juhanis [2], Sudirman [3], Hasyim [4], M. Said Zainuddin [5]

[1,2,3,4,5] Physical Education Health and Recreation, Faculty of Sport Science, Universitas Negeri Makassar, Makassar, Indonesia

Article Info

Abstract

Athletics is the oldest sport or known as the Mother of Sport. The Mother of Sport is also called the mother of all sports. The reason athletics is called the Mother of Sport is because athletics is a combination consisting of walking, running, jumping and throwing. Athletic learning especially shot put at school, is increasingly in demand by students. This is due to the quality of the material provided by the teacher, this study aims to compare role-playing training methods of bullet repelling. The method used in this study is a 2x2 factorial experiment. The subject involved was students of athletic extracurricular members totaling 40 students. Data analysis in this study is two-way ANOVA using SPSS 20. The results of this study are 1) There is an effect of training methods on learning results of bullet repelling, 2) the effectiveness of learning outcomes is influenced by the quality of high arm muscle power, and not influenced by strength to the effectiveness of learning outcome to reject bullets. The conclusion can be adjusted to the characteristics of student learning.

INTRODUCTION

Shot put, also known as shot throwing, is a track and field event in which athletes compete to throw a heavy spherical object, known as a shot, as far as possible. The shot is typically made of metal and can weigh between 4 to 7.26 kilograms for men, and 4 to 4.5 kilograms for women. The technique of shot put involves the athlete holding the shot near their neck, resting it on their shoulder, and pushing it forward while rotating their body. The goal is to generate maximum force and speed to propel the shot as far as possible. Shot put requires a combination of strength, speed, and technique. Athletes need to have strong upper body and core muscles to generate power, as well as good coordination and balance to execute the throwing motion effectively. Student achievement is not always obtained from teaching and learning activities in the classroom. Physical education subjects provide space and opportunities for students to develop their physical and motoric potential through motion activities, one of which is learning sports material. Athletics is a part of the sport in which there are road numbers, running, throwing and jumping (Douglas Kalman, 06 May 2022.). The purpose of this study was to examine relationships among biomarkers of iron status, athletic performance, growth and development, and dietary intakes in pre-adolescent and adolescent male and female athletes. (Marni E. Shoemaker, 01 Apr 2022.) Previously most sport wolkers short put teaching hours, in teaching the students action is in accordance with the textbook technical norms movement essentials, very strict according to the textbook requirements step by step teaching (Andi Muhammad Fadlih, 2019). In linthore's opinion (2001) the throwing technique requires great throwing explosive strength and ability to perform the elements in the precise moment and in limited space. The achieved result of the throw depends on morphological characteristics, motor abilities, and throwing technique (Basti, 2021). The goal is to throw the shot away as far as possible, but according to the rules and regulations of the competition. Rotational (spin) and the slide (O'Brien) throwing technique are considered equal, but it was noticed that beginners and female athletes often use the slide technique, while men use the rotational technique of throwing more often (Coh M & Jost, 2015).

Athletics is an exclusive collection of sporting events that involve competitive running, jumping, throwing and walking (Fadlih, A M; Idham, A F; Nugraha, A I; Dongoran, M F, 2020). The most common types of athletics competition are track and field, road running, cross country running, and race walking (Dita Hindriani, 2018). In the number throwing section there is a shot put, lately shot put have rarely been taught in schools due to several factors, including the athlete is the sport of speed, strength, which requires extreme nutrition because thrower group requires maximum strength (Douglas Kalman, 06 May 2022.). Mastering bullet branch branch learning material, students can deepen the material and learning outcomes through extra-curricular activities. This is because the focus of learning is done outside of school hours, in demand by students who have the same goals and the conditions of students who share similar characteristics. The use of training methods in getting learning outcomes has an influence in achieving maximum results. Achieving learning outcomes using varied methods can increase. For this reason, the study focused on the effect of learning to shoot using two methods and arm muscles. (Zhanfeng, 2016).

METHODS

The research is a 2x2 factorial design experimental study. Factorial experiments are experiments that almost or all levels of a factor are combined or crossed with all levels of each of the other factors that exist in the experiment (Fadlih, A M; Idham, A F; Nugraha, A I; Dongoran, M F, 2020). Factorial design involves two or more independent variables, and at least one that is manipulated by the researcher. The term factorial refers to the fact that the design involves several factors. The experimental design consists of independent variables which are treatment variables, namely role playing methods and demonstration methods. While the moderator variable is arm power. Design formulation in the table 1:

Table 1. Research Design Framework

Variabel V.Manipuatif V.Atribut		Training Method	
		Role playing(A_1)	Demonstrasi (A_2)
Power muscle Arm height (B_1)	B_1	A_1	A_2B_1
Power muscle Arm low (B_2)	B_2	A_1	A_2B_2

This study was conducted for 16 meetings beginning with the pretest and ending with the posttest (Marni E. Shoemaker, 01 Apr 2022.). The frequency of treatment is carried out three times a week for four weeks. This is based on the body's adaptation to the training load received (Ilham k, 2023). The data analysis technique uses two-way variant analysis (ANAVA) to test the hypothesis with a significant level α= 0,5 significant increase, a T-Test (Pair samples) is done which is -13.082 with a sig value of 0.00 <0.05.
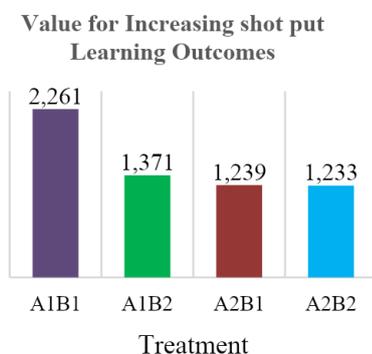
RESULT

The results of this study are the method of role playing training in the group of high arm muscle power able to improve the learning shot put. This is based on the results of data on improving short put learning outcomes. The role playing method with the lower arm muscle power group obtained the difference between before and after treatment (M, 2015).. Descriptive statistical results, mean increase in shot put learning outcomes in the treatment of the method of role playing training with high arm muscle power obtained at 1.56. This condition can be explained because there is an increase that after the treatment of the role playing method on lower arm muscle power can increase the learning outcomes of shot put. Furthermore, to find out the significance of the increase, a T-Test (Paired samples) is carried out -7.031 with a sig value of 0.00 <0.05. It can be concluded that the role playing training method in the lower arm muscle power group is able to improve the learning outcomes of shot put.

A. The results of learning to shoot out with the demonstration method. Data on increasing the results of learning to reject the bullet method of demonstration training methods with groups of high arm muscle power obtained the difference between before and after treatment. Descriptive statistical results, mean increase in bulletproof learning outcomes in the treatment of demonstration training methods with high arm muscle power obtained at 2.44. This condition can be explained that there is an increase that after the treatment of the demonstration exercise method on high arm muscle power can increase the learning outcomes of shot put. Furthermore, to find out the significant increase, a T-Test (Paired samples) is conducted which is -14.044

with a sig value of 0.00 <0.05. It can be concluded that the method of demonstration training in high arm muscle power groups is able to improve the learning outcomes of bullet resistance.

B. Data on increasing learning outcomes against bullet demonstration methods with low arm muscle power groups were obtained between before and after treatment. Statistical results, the mean increase in bullet-drop learning outcomes in the treatment group demonstration training method with low arm muscle power group was obtained at 1.44. This condition shows that the treatment method of demonstration training is able to improve the learning outcomes of bulletproofing. To find out whether the significant increase is carried out by t-test (pair samples) with the price of the t-test (pair samples) obtained -8,645 with a significance of 0.00 <0.05. What can be concluded is that the method of demonstration training in the lower arm muscle power group can improve the learning outcomes of shot put.

C. Increased learning outcomes after completion of the treatment on each attribute variable according to the treatment by using a group of low and high arm muscle power can be explained in the following figure 3:

Figure 1. Description of Improved Learning Outcomes

The test used in this study is the analysis of two-lane variants (ANAVA). The calculation process is done using SPSS 20.

1. Test the First Hypothesis

The results of the analysis using anova obtained the F price, p <0.05 significance level. F count is 42.255 with a significance level of 0.021. Thus the hypothesis is accepted, there are differences in the influence of the role playing method and the demonstration method on the results of learning to shoot out. While the results of the effectiveness of using two methods, obtained by the role playing method has a mean difference of 0.546 compared to the demonstration training method can be interpreted that the method of demonstration method is more effectively used as a training method in obtaining the results of learning to shoot out.

2. Test the Second Hypothesis

The results of the analysis using ANOVA obtained the F price, p <0.05 s n (Zhanfeng, 2016) (Coh M and Jost, 2015) (S, 2016) (M, 2015) (R. F. W. Fitriani, 2018)significance level. F count is 48,342 with a significance level of 0.065. Thus the hypothesis is accepted, students who have high arm muscle power and students who have low arm muscles have a different influence on the learning outcomes of bullet resistance. Whereas the results of the effectiveness obtained by mean difference data 2, 314 that students who have high arm muscle power have the effect of a better shot result.

3. Test the Third Hypothesis

The results of anova analysis obtained significance of 0.723> 0.05. There is no interaction between the training method and the arm muscle power between the method of training and the power of the arm muscles. It can be

concluded that students who have high arm muscle power and low arm muscle power by being given different training methods can achieve an increase in learning outcomes. The results of the analysis using ANOVA obtained the HP price <0.05 significance level. F count is 42.255 with a significance level of 0.021. Thus the hypothesis is accepted, there are differences in the influence of methods and role playing training and demonstration training methods on the results of learning to shoot out. While the results of the effectiveness of the use of two methods, obtained by the method of role playing training has a mean difference of 0.546 compared to the method of demonstration training, can be interpreted that the method of role playing is more effectively used as a training method in obtaining the results of learning bullet shooting.

DISCUSSION

About the results of data analysis. The results of the hypothesis analysis are concluded, The method of role playing practice is a type of method that uses peer strategies that direct examples directly to fellow students. Based on the results of this study it was concluded that the role playing training method was more effective than the demonstration training method (Moh. Slamet Subadar, 2022). This is due to the characteristic factors of students who are reluctant to be taught by teachers with short put material. The characteristics of the role playing training method emphasize that the types of movements that are difficult and have risks will be easier to learn by peers by applying them to peers (Verónica Giráldez-Costas, 06 Jul 2022). Psychological variables consist of perception, attitude, personality, learning and motivation (Marni E. Shoemaker, 01 Apr 2022.). This is because an individual will be easier to master the correct

technique if they do it themselves. An alternative cross-sectional approach, which is less frequently used, is to compare several trials of the same individual (Moh. Slamet Subadar, 2022). This is in accordance with the law of practice (R. F. W. Fitriani, 2018) the more frequent the movement pattern is repeated, trained, and practiced, the motion pattern will be stronger. This is also according to opinion (R. S. B. D. & S. J. Kluge A, 2013) traditional approach: "practice makes perfect", while method 1 has a weakness or disadvantage, namely the use of time that is not efficient. Power of the high arm muscles and the power of the lower arm muscles have different learning outcomes. This is affected by high explosive power. This is an appropriate shot put is a dynamic event demanding high power production (S, 2016). Shot Put is a dynamic event that requires high power production. Muscle power is mainly determined by muscle strength, maximum movement speed and neuromuscular activation (Verónica Giráldez-Costas, 06 Jul 2022). Interaction of training methods and arm muscle power.

The description shows that the results of this study have no interaction between training methods and arm muscle power. It can be explained that there is no interaction between the training method and the arm muscle power. According to scientific sources it is said that sport is one of the systematic physical activities that has the goal of perfection, in carrying it out without fear and full of courage. Sports are now very popular with everyone, especially children. One of them is athletics which is a basic movement. Athletics is the oldest sport. Athletics is also called the mother of sport. Athletics is a physical activity consisting of dynamic and harmonious basic movements, namely walking, running, jumping and throwing. From the results of

research on the ability of Kid's athletics in elementary school students, it can be said that some school is in the "less" category or 40.5%, because the ability of teachers who are less skilled in the Kids Athletics branch and teachers also have not introduced students to the numbers kids athletics competition numbers. It can be said that the ability of Kids Athletics in some school in the "low" category or at 55.2%, because the students' abilities are not optimal in carrying out tests and also learning Kids Athletics is not yet in the curriculum so the teacher does not introduce Kids Athletics learning, the teacher only teaches just basic movements. It can be said that the ability of kids athletics at elementary school is in the "very poor" category or 72.5%, because this school still lacks facilities and infrastructure, also the learning of Kids Athletics is not yet in the curriculum so the teacher does not introduce Kids Athletics learning, the teacher only teaches just basic moves. It can be said that the ability of kids athletics in the school is in the "very poor" category or 73.9%, because the teachers at the school did not introduce Kids athletics in PJOK learning and many students were not optimal in carrying out the test. It can be said that for the ability of some Elementary Schools, the ability of kids athletics is in the less category or by 35.% and very less or by 44.9%. From the results it can be concluded that there are many factors influencing the ability of Kid's athletics in elementary school students in Some school, namely the lack of facilities and infrastructure in each school even though there is no equipment introduced to children, there is no coaching at school, and there is no introduction of kids athletics in PJOK learning, but basically students have basic movement abilities such as running, jumping and endurance.

CONCLUSION

Shot put learning exercises should be done by paying attention to achieving maximum results. For this reason, a teacher should understand and have various types of methods that can be applied to the learning process. Bullet rejects have different characteristics in the Athletic branch number on the throw number. The role playing method used in the practice of shot put can be adjusted to the power of the arm muscles. While the demonstration method has its own superior characteristics in high arm muscle strength. A method that can support learning outcomes that are effective and efficient can be used by a trainer and instructor who can be adapted to the characteristics of the students.

REFERENCES

Andi M, F, P. R. (2019). Minat Dan Motivasi Peserta Didik Penyandang Disabilitas Ketunarunguan Terhadap Mata Pelajaran Pendidikan Jasmani Kesehatan Dan Olahraga. Musamus Journal Of Physical Education And Sport (MJPES), 10-18.

Basti, A. M. (2021). Teori Dan Inovasi Pendidikan. Sulawesi Selatan: Cv. Syahadah Creative Media (Scm).

Coh M & Jost. (2015). A Kinematic Model Of Rotational Shot-Put. Beijing.

Dita H, S. (2018). Analisis kemampuan kids athletics pada siswa sekolah dasar di kota bengkulu. KINESTETIK : Jurnal Ilmiah Pendidikan Jasmani, Vol 2 No 1.

Douglas K, S. F. (06 May 2022.). The Comparative Effects Of Nutritional Drinks Designed To Augment Athletic Performance And Recovery. Journal Of The International Society Of Sports Nutrition, 10-11.

Fadlih, A M; Idham, A F; Nugraha, A I; Dongoran, M F. (11. June 2020). Effects Of Doping On Physical And Mental Health Of Sports Athletes. Enfermería Clínica, 30(4), 504-506.

Fitriani, F., Betaubun, P., Pure, E. A., Tikon, D., Maturbongs, E. E., Cahyanti, T. W. A., & Waas, R. F. (2018). Relationship of employee ethnic background in Validation of Situational leadership Theory. Indian Journal of Public Health Research & Development, 9(2), 200-215.

Ilham K, E. A. (2023). Fisiologi Olahraga. PT. Global Eksekutif Teknologi. (Ei Pvm).

Kamal, S. (2016). Effect of functional strength training on performance level of shot put. Ovidius University Annals, Series Physical Education and Sport/Science, Movement and Health, 16(1), 98-103.

Marni E. S, Z. M. (01 Apr 2022.). Sex-Specific Relationships Among Iron Status Biomarkers, Athletic Performance, Maturity, And Dietary Intakes In Pre-Adolescent And Adolescent Athletes. Journal Of The International Society Of Sports Nutrition, 50-62.

Moh. S , R. K. (2022). Effect Of Push-Up And Pull-Up On Shot Put In Men's Athletics Extracurricular Member Of Mts Darul Ulum Purwodadi. Prosiding Seminar Nasional Pendidikan Jasmani Dan Keolahragaan. Malang: Prosiding Seminar Nasional Pendidikan Jasmani Dan Keolahragaan.

Rusli, M., Marsuna, M., Jud, J., Elumalai, G., & Nurhadi, F. I. (2023). The effect of strength training using the standing bench press method on shot put ability. Jurnal Keolahragaan, 11(1), 113-121.

Refiater, U. H., Liputo, N., & Haryanto, A. I. (2022). Development of the shot put exercise model. Halaman olahraga nusantara, 5(2), 395-404.

Verónica G, C, M. A.-N.-G. (06 Jul 2022). Acute Caffeine Supplementation Enhances Several Aspects Of Shot Put Performance In Trained Athletes. Journal Of The International Society Of Sports Nutrition, 366-380.

Zhanfeng, L. (2016). Research On The Shot Put Technique Of College Athletes Based On Network Multimedia Teaching. Int. J. Signal Process, 69-80.