

# The Effect of Exercise and Motivation Method of Sport towards the Result on the Physical Fitness (Experimental Study on Students SMPN 1 Sajoanging, Wajo Regency, South Sulawesi Province)

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**Abstract:** *This study aims to know the effect of exercise and motivation method of sport toward the result on physical fitness. Motivation is divided into two parts, namely high and low. This study was conducted at SMP N 1 Sajoangin, wajo regency, south Sulawesi province, and academic year 2016/2017. Experiment method was by using factorial design 2x3. The sample consist of 96 students which divided into 6 groups, each group consist of 16 students. The data analysis technique is a two-way analysis of variance and continued by Tukey test at significance level  $\alpha = 0.05$ . The result of this study showed that (1) there was differences between exercise method of Speed, Agility and Quickness (SAQ) and exercises method of plyometric toward the health condition. (2) There were differences between the effect of exercise method of Speed, Agility and Quickness (SAQ) and exercise method mix toward health condition, (3) there was a differences on the effect of exercises plyometric method and exercises mix method towards training fitness, (4) there were differences in the effect of Speed, Agility and Quickness (SAQ) training methods and plyometric exercise methods on physical fitness in high motivation groups, (5) there were differences in the effect of Speed, Agility and Quickness (SAQ) training methods with combined exercise (mix) on physical fitness in high motivation group, (6) there were differences in the effect of plyometric exercise method with the method of mixed exercise (mix) on physical fitness in high motivation group of sports, (7) there was a difference in the effect of Speed, Agility and Quickness (SAQ) exercise method with plyometric exercise method on physical fitness in low exercise motivation group, (8) there was a difference in the effect of Speed, Agility and Quickness (SAQ) training methods with combined exercise (mix) method of physical fitness in low motivation group of exercise, and (9) there was a difference in the effect of plyometric exercise method with the combined exercise method (mix) on physical fitness in low exercise motivation group.*

**Keywords:** Speed, Agility, Quickness, Plyometric, exercise motivation, physical fitness

## 1. Introduction

In the era of modernization is full of challenges, including threats to the quality of life associated with human health. People in developed countries have felt the series as a result of lifestyle more silent, less mobile and excess calories as a result of automation and excess calories. Sooner or later it will begin feel that the people of Indonesia have started living the silent lifestyle, especially among the upper middle layer. As a result, it is the increase of hypokinetic disease (less movement), the direct result is the low ability and high rate of illness which of course also affects one's physical fitness.

Healthy humans are a necessary resource in development therefore sports need to be increasingly socialized and enhanced as a way of physical and spiritual development for every member of society ". Then also supported by government advice with the National Sports *Panji* movement that is: "To socialize sports and to exercise society". So sport is expected degree of health and physical fitness will increase.

Therefore, high physical fitness is required by everyone both school-age children, colleges and the general public. By having a high physical fitness, students will be able to perform daily activities with a longer time than students who have low physical fitness. Physical fitness is essentially a

body condition that reflects a person's ability to perform daily work without excessive fatigue and still be able to perform other activities. Physical fitness has an important meaning for humans, among others can improve the function of body organs, emotional social, sportsmanship, and the spirit of competition.

It is a shared hope in the learning process as well as the training process that every learner should have good physical fitness. In the process of learning and training process there are several components that are interconnected, the components in question are lecturers, students, learning objectives, training methods, learning models, situations, and evaluation of learning, and environment. These components interact with each other and lead to a goal that is changing the behavior of learners that includes the realm of intellectual, emotional and spiritual intelligence and increased physical fitness of students

Based on the problem above, this research is directed "the effect of Speed, Agility and Quickness (SAQ), Plyometric and motivation method of sport towards the result on the physical fitness SMP N 1 *Sajoangin wajo* regency, south Sulawesi province".

Based on the background, the problems of the study can be formulated as follows: The context dimension, which consists of (1) Is there any difference effect of Speed,

Volume 6 Issue 9, September 2017

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Agility and Quickness (SAQ) training methods and plyometric exercise methods on physical fitness, (2) Is there any difference effect of Speed, Agility and Quickness (SAQ) training methods and combined exercise (mix) method of physical fitness, (3) Is there any difference effect of the plyometric training method and the combined exercise method (mix) on physical fitness, (4) Is there any difference in the effect of Speed, Agility and Quickness (SAQ) training methods and plyometric exercise methods on physical fitness in high-motivation exercise groups, (5) Is there any difference effect of Speed, Agility and Quickness (SAQ) exercise method with mixed exercise method on physical fitness in high exercise motivation group, (6) Is there any difference in the effect of the plyometric training method with the combined exercise method (mix) on physical fitness in high motivation group, (7) Is there any difference effect of Speed, Agility and Quickness (SAQ) exercise method with plyometric exercise method on physical fitness in low motivation group of exercise, (8) Is there any difference effect of Speed, Agility and Quickness (SAQ) practice method with mixed exercise method to physical fitness in motivation group of lace sports (9) Is there any difference effect of the plyometric training method with the combined exercise method (mix) on physical fitness in low exercise motivation group.

## 2. Theoretical Description

### Physical fitness

Physical fitness is known by the foreign term "physical fitness." Physical means body while fitness means fresh. Its physical fitness means a healthy body and fresh. Understanding physical fitness is seen as a concept that has a wide scope. Therefore, an expert was defined in accordance with the point of view of expertise. For example, in terms of medicine is more emphasis on the ability of the heart and lungs. From the field of sports are more focused on the success of physical activity without causing significant fatigue.

A person who has a physical fitness level will be able to do his job well without experiencing significant fatigue, and his body remains fresh when he stops working and at rest. Conversely low levels of physical fitness is an obstacle in carrying out its work

### Training Method

The planning process of an exercise program should refer to well-organized, methodical, and scientific procedures. The invention of the methods of practice that can be applied in the process of daily practice can be seen clearly in the science of sports as a whole has grown rapidly which originally only a natural explanation, now become a scientific advanced knowledge that is expected to follow the changes that occur in the world of sports, especially the utilization of Science and Technology for scholastic achievement sports maximally. The role of trainers to be an indicator of the development of students, the high level of athlete performance depends on both the poor planning of the exercise program.

Training is a systematic process of practicing or working repeatedly with the addition of training or work load

(Harsono, 1988). While Bompa (1994) argued his opinions that exercise is a systematic sport activity and in a long time gradually increased and individual, aims to form human physiological and psychological function to meet the demands of the task.

### Speed, Agility and Quickness (SAQ)

Speed, agility and speed (reaction time) is an exercise system devoted to the development of motor skills and control of body movement through the development of a neuromuscular system. It aims to improve the ability of athletes to perform multi power movements by reprogramming the neuromuscular system, so it can work more efficiently (Vallimurugan, 2012). Gregory (2004) defines SAQ training as a progressive exercise that leads to the development of major motion capabilities to improve the ability of the player or athlete so that it is better (faster) on his skill. Another suggestion was that SAQ is expected to improve the ability of athletes to use maximum strength during high speed movements (Brown, 2005).

SAQ training results in neuromuscular adaptation, increased strength and power can lead to reduced contact time with surface and higher strength production at a faster rate (Young, James, and Montgomery, in Johnson, 2012: 29). Increased power can provide a partial explanation for an increase in the experimental group in speed. Therefore, it has been shown that muscle strength is related to running performance (Young, McLean, and Ardagna, in Johnson, 2012: 29). Based on the above explanation it can be concluded that SAQ is training aimed at the development of neuromuscular, and produce higher and faster strength.

### Plyometric

Plyometric proposed by Radcliffe and Farentinos (1985: 3-4), that plyometric is a training or steps or repetition aimed at connecting the motion of velocity and strength to produce explosive movements. Meanwhile, according to Elsayed (2012: 105) said plyometric is a training technique used by athletes that can be observed and plyometric training can also be done on all types of sports to improve strength, safe and effective explosive power for children and adolescents. Strong muscle contractions are a response to the dynamic loading or rapid burst of muscle involved.

From the above definition it can be concluded that plyometric training is actually a form of combination training isometric and isotonic (eccentric-concentric) that uses dynamic loading.

### Combination (mix)

The combined method is a gradual exercise method; it means that this exercise combines two methods of Speed, Agility and Quickness (SAQ) exercises with plyometric training methods, from the introduction/ practice own technique until speed, Speed, Agility and Quickness (SAQ) with plyometric training method which is a complete movement technique.

### Motivation

According to Syamsuddin (2009:37) although experts define motivation with a different style, but its essence leads to the same intent, motivation are: 1) is a power or forces or

energy, 2) is a complex state and prefatory set in individual self to move towards a certain goal, whether conscious or unconscious.

Basically, motivation is a psychological condition that drives someone to doing something. In the learning activity, motivation can called as the overall driving force within the student that raises, ensures continuity and gives direction of learning activities, so hopefully the goal can be achieved. In the learning activity, motivation is necessary, because someone who hasn't motivation in learning won't be possible to do learning activities.

### 3. Research Method

This research was conducting by experimental method. Technique of analysis data was conducting by 2x3 factorial designs.

**Table 1:** 2x3 factorial designs

Training method (A) Motivation (B)	SAQ (A <sub>1</sub> )	Plyometric (A <sub>2</sub> )	Combination (mix) (A <sub>3</sub> )
High (B <sub>1</sub> )	A <sub>1</sub> B <sub>1</sub>	A <sub>2</sub> B <sub>1</sub>	A <sub>3</sub> B <sub>1</sub>
Low (B <sub>2</sub> )	A <sub>1</sub> B <sub>2</sub>	A <sub>2</sub> B <sub>2</sub>	A <sub>3</sub> B <sub>2</sub>
<b>Total</b>	<b>A<sub>1</sub></b>	<b>A<sub>2</sub></b>	<b>A<sub>3</sub></b>

Sample of this research was a male student of SMPN 1 Sajoanging, wajo regency; academic year was 2016/2017 grade VIII which consist of 96 samples. This research was conducting on January 27<sup>th</sup> – April 27<sup>th</sup>. In collecting the data needed in this study, researchers used data collection techniques in the form of existing test instruments. Data collection techniques can be described as follows:

**Table 2:** Form of Physical Fitness Test (*The Ministry Of National Education 2010*)

Factors	Assessment items
1. Strength and endurance of the muscles of the arms and shoulders	1. Pull Ups (Depending on the body lift) for man
2. Endurance of the abdominal muscles	2. Sit ups (lying down and sitting) 60 second
3. Power of the limbs	3. Jumping upright.
4. Running speed	4. Running fast 50 yards (45,74meter).
5. Cardiovascular ,circulatory and respiratory endurance	5. Run away 1200 meters

Technique of analysis data was conducting by variance analysis technique two ways with significance level  $\alpha = 0, 05$ . The requirements that were required in the analysis of variants were normality tests which by using the Liliefors test and homogeneity test by using Bartlett test, and continued with Tukey test if there is interaction. Data analysis techniques were by using SPSS Version 20.

### 4. Result and Discussion

The results of the research were as follows: (1) there was differences effect of Speed, Agility and Quickness (SAQ) training methods and plyometric training methods on physical fitness, obtained by  $Q_{count}$ , equal to -1.813 with a significant level of 0.020 was much smaller when compared with  $\alpha = 0.05$  (2) there was a difference of influence of

Speed, Agility and Quickness (SAQ) training method and mixed exercise method to physical fitness, the value of  $Q_{count}$  is -1.231 with a significant level of 0.008 was much smaller when compared with  $\alpha = 0.05$  (3) there was difference of influence of plyometric exercise method and mixed exercise method to physical fitness, it is obtained  $Q_{count}$  value equal to 1,906 with significant level 0,002 much smaller when compared with  $\alpha = 0,05$  (4) there was a difference of influence of Speed, Agility and Quickness (SAQ) training method and plyometric exercise method on physical fitness in high exercise motivation group, obtained  $Q_{count}$  value equal to 1,222 with significant level 0,004 much smaller when compared with  $\alpha = 0,05$  (5) there was difference of influence of method of exercise of Speed, Agility and Quickness (SAQ) with method of mixed exercise to physical fitness in high exercise motivation group, obtained value of  $Q_{count}$  equal to 1,183 with significant level 0.000 much smaller when compared with  $\alpha = 0, 05$  (6) there was difference of influence of plyometric exercise method with mixed exercise method (mix) to physical fitness in high exercise motivation group, obtained value of  $Q_{count}$  as big as 2,133 with significant level 0,003 much smaller when compared with  $\alpha = 0,05$  (7) there was difference of influence of method of Speed, Agility and Quickness (SAQ) exercise with plyometric exercise method on physical fitness in low exercise motivation group, obtained  $Q_{count}$  value 3,242 with significant level 0.000 much smaller when compared with  $\alpha = 0,05$  (8) there was a difference of influence of Speed, Agility and Quickness (SAQ) practice method with mixed exercise method on physical fitness in low exercise motivation group, obtained  $Q_{count}$  value 2,134 with significant level 0.000 much smaller when compared with  $\alpha = 0, 05$  (9) there was difference of influence of plyometric exercise method with mixed exercise method toward physical fitness in low exercise motivation group, obtained  $Q_{count}$  value 3,364 with significant level 0.000 much smaller when compared with  $\alpha = 0,05$ .

### 5. Conclusion and Suggestion

#### 5.1 Conclusions

From the results of hypothesis testing and discussion of research results, we can concluded that : (1) Speed,, Agility and Quickness (SAQ) training methods are better than plyometric exercises for physical fitness, (2) Speed,, Agility and Quickness (SAQ) training methods exercise is lower when compared to the combined exercise (mix) method of physical fitness, (3) Plyometric training methods are lower when compared to the combination exercise method (mix) of physical fitness, (4) Speed, Agility and Quickness (SAQ) training methods are better than plyometric training methods for plyometric exercise on physical fitness in high motivation groups (5) Speed, Agility and Quickness (SAQ) training methods is lower when compared to the method of mixed exercises (mix) on physical fitness in a group of high exercise motivation, (6) plyometric training method is lower when compared with the method of mixed training (mix) of physical fitness in the group of high exercise motivation, (7) speed, Agility and Quickness (SAQ) training methods is better than the plyometric exercise of physical fitness in low



motivation groups, (8) speed, Agility and Quickness (SAQ) training methods is better than the combination training (mix) approach to physical fitness in low-motivated exercise groups, and (9) Plyometric training methods are better than the combined exercise (mix) approach to physical fitness in low-motivated exercise groups.

## 5.2 Suggestions

Based on the conclusion of the research, the writer point out some suggestion as following:

- 1) The purpose of this study is limited to search the influence of three training methods approach and two motivation to sport (high and low) towards physical fitness outcomes, therefore as a follow-up can be done form of similar teaching materials, but by involving elements and other potential.
- 2) In this study were incorporates three assessment instruments namely improvement of physical fitness and the results as a product, in relation to that it is recommended to the teacher that in assessing the ability of the students practice always pay attention to physical fitness as the end result of a judgment.
- 3) It is needed to do further research by adding variables and choosing other category variables or attributes.

## References

- [1] Adams, Kent., O'Shea, Jhon., O'Shea, Katie.L., Climstein, Mike. 1992. "The Effect of Six Weeks of Squat, Plyometric and Squat Training on Power Production". Human Performance Laboratory, Oregon State University, Corvallis. *Journal of Applied Sport Science Research*. Vol 6, No 1, pp.36-41.
- [2] Ambarukmi, D.H., Pasumey, P., Sidik, D.Z., Irianto, J.P., Dewanti, R.A., Sunyoto., Sulistiyanto, D. dan Harahap, Y. *Pelatihan Pelatih Fisik Level 1*. Jakarta: Kemenegpora. 2007
- [3] American College of Sports Medicine. "Position Stand: The Recommended Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory and Muscular Fitness, and Flexibility in Healthy Adults" *Medicine and Science in Sports and Exercise*, 1998, 30.
- [4] Asisten Deputi Olahraga Pendidikan. *Kajian Pengukuran Hasil Pembinaan Olahraga Pendidikan*. Jakarta: Deputi Bidang Pembudayaan Olahraga, Asisten Deputi Olahraga Pendidikan, Kementerian Pemuda dan Olahraga RI, 2013.
- [5] Asisten Deputi Pengembangan Tenaga dan Pembina Keolahragaan. *Pedoman dan Materi Pelatihan Pelatih Tingkat Muda*. Jakarta: Asisten Deputi Pengembangan Tenaga dan Pembina Keolahragaan, Deputi Bidang Peningkatan Prestasi dan Iptek Olahraga, Kementerian Negara Pemuda dan Olahraga RI, 2008.
- [6] Astrand, P. O., dan Rodhal, K. *Textbook of Work Physiology, Physiological Bases of Exercise*. New York: McGraw-Hill, 2003.
- [7] Atmojo, Biyakto, Mulyono, *Tes & Pengukuran Pendidikan Jasmani/Olahraga*, Surakarta: LPP UNS dan UNS Press, 2010
- [8] Birch, Karen., MacLaren, Don., dan George, Keith. *Sport and Exercise Physiology*. London: Taylor & Francis, 2009.
- [9] Bompa, Tudor O., dan Haff, Gregory G. *Periodization: Theory and Methodology of Training*, Champaign, IL: Human Kinetics, 2009.
- [10] Boone, Jeffrey L. "A New Curriculum for Fitness Education." *Public Health Reports*, September-October 1983, Vol. 98, No. 5.
- [11] Chu, D.A.. *Jumping Into Plyometric* (second edition). United State of America: Human Kinetic, 1998.
- [12] Corbin, Charles B. "Youth Fitness, Exercise and Health: There is Much to be Done" *Research Quarterly for Exercise and Sport*, Vol. 58, No. 4, 1987.
- [13] Crum, Bart. "Changes in Movement Culture: Challenges for Sport Pedagogy" Proceedings from the AISEP Conference 2, Sport Leisure and Physical Education, Trends and Developments, 1994.
- [14] Depkes RI, *Pedoman Pembinaan Kebugaran Jasmani Jemaah Haji Bagi Petugas Kesehatan di Puskesmas*, Jakarta: Departemen Kesehatan RI, Direktorat Jenderal Bina Kesehatan Masyarakat, Direktorat Bina Kesehatan Komunitas, 2009
- [15] Emzir, *Metodology Penelitian Pendidikan Kuantitatif & kualitatif Korelasional, Eksperimen, Ex Post Fakto, Etnografi, Ground Theory dan Action Research*, Jakarta: Rajawali Pers, 2012
- [16] Giriwijoyo, H.Y.S. Santoso., dan Sidik, Dikdik Zafar. *Ilmu Faal Olahraga (Fisiologi Olahraga): Fungsi Tubuh Manusia pada Olahraga untuk Kesehatan dan Prestasi*. Bandung: PT Remaja Rosdakarya, 2012.
- [17] Halim, Ihsan, Nur, *Tes dan Pengukuran Kesegaran Jasmani*, Makassar: Badan Penerbit UNM, 2011
- [18] Harsono. *Coaching dan Aspek-Aspek Psikologis dalam Coaching*. Jakarta: C.V. Tambak Kusuma, 1988.
- [19] Harsono. *Periodisasi Program Latihan*. Bandung: PT Remaja Rosdakarya, 2015.
- [20] Hoeger, Werner W.K., dan Hoeger, Sharon A. *Principles and Labs for Fitness & Wellness 11<sup>th</sup> Ed*. USA: Wadsworth, Cengage Learning, 2012.
- [21] Jariono, Gatot. "Pengaruh materi ajar, kemampuan mototik dan motivasi belajar terhadap peningkatan kebugaran jasmani siswa sekolah dasar" (Disertasi, Universitas Negeri Jakarta, 2015.
- [22] Johansson, Rolf. *System Modeling and Identification*. Pennsylvania State University: Prentice Hall, 1993.
- [23] Johnson, Glee. *Physical Education Model Content Standards for California Public Schools*. California: Department of Education, 2006.
- [24] Kamus Bahasa Indonesia. Jakarta: Pusat Bahasa Departemen Pendidikan Nasional.
- [25] Kant, Shiv. "Physical Activity: A Basic Need for All." *International Journal of Science and Research (IJSR)*, Volume 3 Issue 1, January 2014.
- [26] Kirkendall, Don R. Gruber, Joseph J dan Johnsen Robert E. *Measurement an Evaluation for Physical Educator*. Dubuque IOWA: Wm.C. Brown Company Publiser, 1980
- [27] Mutohir, Toho Cholik., dan Maksum, Ali. *Sport Development Index: Konsep, Metodologi dan Aplikasi*. Jakarta: PT Indeks, 2007.
- [28] Nurhasan, dkk. *Petunjuk Praktis Pendidikan Jasmani (Bersatu Membangun Manusia yang sehat Jasmani dan Rohani)*. Surabaya: Unesa University Press, 2005.

- [29] Sugiyono. *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R & D*. Bandung: Penerbit Alfabeta, 2012.
- [30] Sukadiyanto. *Metode Melatih Fisik Petenis*. Yogyakarta: Universitas Negeri Yogyakarta, 2009.
- [31] Tim Penyusun Kamus Besar Bahasa Indonesia, *Kamus Besar Bahasa Indonesia*. Jakarta: Pusat Bahasa Depdikbud, 2008.
- [32] WHO. *Health and Development Trough Physical Activity and Sports*. New York: World Health Organization NCD and Mental Health, NCD and Health Promotion Publication, 2004.
- [33] WHO. *Move for Health World Health Day*. New York: WHO, 2002.
- [34] World Health Organization. *Global Recommendations on Physical Activity for Health*. World Health Organization, 2011.

