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A comparative study on the effects of Speed, Agility and Quickness (SAQ) training on vital capacity of school children

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Abstract

Speed, agility, and quickness (SAQ) training has become a popular way to train athletes. This method has been around for several years. Speed, agility, and quickness training may be used to increase speed or strength, or the ability to exert maximal force during high speed movements. Some benefits of speed, agility, and quickness training include increases in muscular power in all multiplanar movements; brain signal efficiency; kinaesthetic or body spatial awareness; motor skills; and reaction time. Speed, agility, and quickness training can cover the complete spectrum of training intensity, from low to high intensity. SAQ drills can also be used to teach movement, warm-up, or to condition an athlete. No significant preparation is needed to participate at this level of speed, agility, and quickness training. Higher intensity drills require a significant level of preparation. A simple approach to safe participation and increased effectiveness is to start a concurrent strength training program when starting speed, agility, and quickness training (Pearson & Naylor, 2003). The Purpose of the study was to find out "Effect of SAQ Training on Vital Capacity of School Children". To achieve this purpose 50 school children in the age group ranging from 13 to 17 years studying in Govt. High School, Kota, Rajasthan State, were selected randomly as subjects. The following SAQ training were selected for 8 weeks of training for 50 subjects. Criterion variable Physiological Variable was selected measured by using Vital Capacity. It was used for pre -test and post -test. The result shows that the 8 weeks of SAQ training develops Vital Capacity Performance. SAQ training develops Vital Capacity Performance.

Keywords: SAQ training, speed, agility, quickness and vital capacity

Introduction

SAQ Training is Speed, Agility and Quickness Training. This method of training aims to improve an athlete's multi-directional movement by reprogramming their neuromuscular system. Speed, Agility and Quickness training also known as SAQ training is a system of dynamic movement and guidelines when create the important of motor abilities to enhance the ability of the individual to be more skillful in faster movement. SAQ training may be used physical training to increase the speed, strength or the ability to apply the maximal force during the fast movements. A few benefits of SAQ training consist of increases in muscular power in linear, horizontal and multi planer movements. It also increased the body spatial awareness, motor skills and reaction of time.

Coordination is the ability to use the sense of body such as sight, hearing, and touch together with body parts in performing the motor tasks easily and correctly. Body coordination can describe as the connections or interaction between the muscular, skeletal and nervous systems. Gao *et al.* stated that hand-eye coordination is important for upper body agility. It is use for vision to guide the movements of the hand such as reaching, moving, catching and grasping. It is require the interact use of eyes, arms, hands and fingers to create the controlled, precise and rapid movement. According to Hollinghurst, stated that visual information is use to determine the things and how should the body to be act. As we know, visual feedback helps to give the direction for our hands around problems and align too accurately with the goal. By the training, it will give the flexibility and dexterity of the movement. Then, for the normal hand-eye coordination occur in visual identification of the objective, attention of focusing, perceptual identification and the location of target, cognitive planning and programming of reaching movement.

Balance is the other components in skill related fitness that have ability to stay the upright or stay in the control movement. Balance divided into two which is static and dynamic.

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Static balance is maintaining the balance in motionless. In this study, focus on the dynamic balance. Bloomfield stated that dynamic balance is the ability to perform the movement and also maintain the body balance while in motion. In dynamic balance, our eyes, ears and the all the body sense will help to maintain our balance. In human's condition, both types of balance are main to guarantee a dynamic way of life.

Children enjoy physical activities because it is not only benefit in motor skill coordination and development but also important in fitness and wellness [6]. According to Asonitou *et al.* stated that children who aged 5 to 11 years old have problem with coordination and their movement. According to Missiuna stated that problem coordination occurs 5 to 6% of school aged children and tend to occur more frequently in boys. Therefore in response to the problem as stated above, the purpose of this proposed study is to measure the level of hand-eye coordination and dynamic balance among children by using SAQ training program and to determine the effect of SAQ training program on hand-eye coordination and dynamic balance among children. Thus, the objective of this study was to determine the effect of SAQ training program on hand-eye coordination and dynamic balance among children.

The programming component of speed, agility, and quickness (SAQ) training is similar to reactive training and follows the same concept of integrated performance paradigm. Speed is this text which essentially refers to state ahead speed, agility refers to a short burst of movement that involve a change of direction and quickness refers to the ability to react to a stimulus and change the motion of the body. Professional can effectively make use of SAQ training to add intensity, complexity, and provide a simple and exciting variety to a routine workout.

SAQ training allows a client to enhance his or her ability to accelerate, decelerate, and dynamically stability the entire body during the higher velocity acceleration and deceleration movements in all planes of motion (such as running, cutting, and changing direction), it may further help the nervous system to respond or react more affectively to demands placed on it and enhance muscular recruitment and coordination when performed with correct mechanics (Clerk *et al.*, 2008) [11]. Polman *et al.* (2009) [4].

Methodology

The procedure adopted in the present research work is related to the selection of subjects, selection of variable, selection of test, and statistical technique involved in the study.

Selection of subjects

The purpose of the study was to find out "Effect of SAQ Training on Vital Capacity of Schoolchildren." To achieve, this purpose 50 Subjects in the age group ranging from 13 to 17 years studying in Govt. High School, Kota, Rajasthan State, were selected randomly as subjects. The following SAQ training was selected for 8 weeks of training for 50 subjects. Criterion variable and physiological variable were selected measured using vital capacity. It was used for pre-test and post-test.

Selection of variable

Independent variable SAQ training

- Butt Kickers, Bounding, Cat Wheel, V-Drill, Back

Pedal, and Wheel Barrow Drill

Dependent variable

Physiological variable

- Vital capacity

Selection of test

The test item and measurement

S. No.	Test item and Tool	Variable	Criterion measurement
1.	Wet spirometer	Vital capacity	Measuring liters

Statistical Techniques

Standard deviation was used to find out a significant mean difference in pre-test and post-test scores of different groups with respect to each parameter. Standard deviation was used to find out significant mean, "t" value difference of two groups with respect to each parameter. The statistical analysis was carried out with the help of the software package of social science 15.0 versions for SPSS packages.

Analysis and interpretation of data

The aim of the research work was to find out the out "Effect of SAQ Training on Vital Capacity of School Children." For the purpose of the research study, 50 subjects in the age group of 13–17 years belonging to the student of Govt. High School, Kota, Rajasthan State, were selected as subjects for the present study. The subjects were divided into two groups. Group I treated as SAQ Training group and Group II considered as control group.

Table 1: The Pre-test and Post-test for SAQ Training Experimental Group on Vital Capacity Performance

Variable	Test	N	Mean	SD	t-value
Vital capacity	Pre-test	25	41.1333	8.31,589	7.780*
	Post-test	25	65.4333	14.61,384	

The level of significance 0.05=Table value=1.96

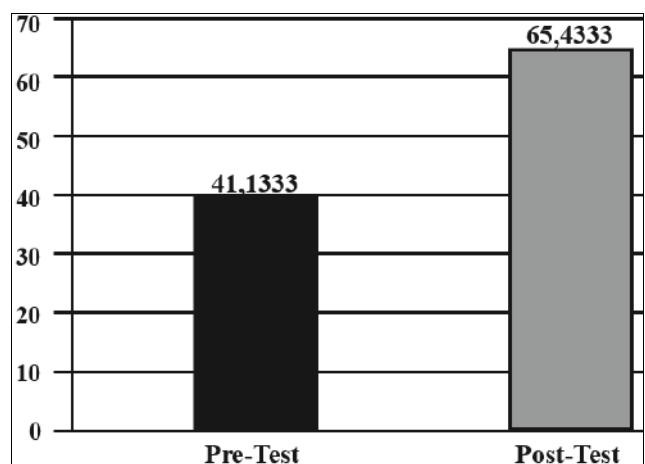


Fig 1: The Pre-test and Post-test for SAQ Training Experimental Group on Vital Capacity Performance

Pre- and post-test data were gathered on vital capacity and the same as described in the following table.

Table 1 indicates that the "t" value is the more than table value that is 1.96; hence, it is significant. The pre-test mean value is 41.1333 and the post-test mean value 65.4333. The post-test mean value is more than the pre-test mean value. It shows significant improvement in the vital capacity performance of schoolchildren due to the eight weeks SAQ

training the same as displayed in Figure 1.

The above Figure 1a clearly indicates that the eight weeks SAQ training performance is drastically improved the vital capacity performance of the subjects.

Summary

The purpose of the study was to investigate the “Effect of SAQ Training on Vital Capacity of School Children.” The researcher selected vital capacity for physiological variable. Eight weeks of SAQ training were given to 50 subjects before training the researcher conducted pre-test performance on the physiological variable. The performance of the pre-test was recorded. After the 8 weeks of SAQ training, the post-test performance was recorded on vital capacity performance. The result of the post-test performance indicates significant improvement.

Conclusion

Eight weeks of SAQ training have shown significant improvement on vital capacity of subjects.

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