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The effect of compound exercises on developing some physical abilities of youth 100-meter runners

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Abstract:

The aim of the research is to prepare suggested compound exercises to develop some physical abilities and the achievement of running 100 meters for the members of the research sample and to identify the effect of using the proposed exercises to develop the speed and power in the achievement of running 100 meters, and the supposed of the research was that there were statistically significant differences between the pre and post results for the control and experimental groups. The researchers used the experimental method in a controlled manner for its suitability and the nature of solving the research problem, as this method is one of the most accurate, best and most efficient types of approaches in reaching accurate results, as the research sample was determined which are 10 of the youth 100 meters runners. They were distributed randomly (by lottery) into two control and experimental groups, each group consisting of (5) runners. The control group used the regular training method while the experimental group used the suggested compound exercises, which it was prepared by the researchers. Physical tests were conducted, including the test of 100 meters achievement. That Shows development of achievement, significant differences appeared between the two research groups in the post-test of variables. So the achievement of running (100) was better in results for the experimental group, and that because of the suggested trainings prepared by the researchers than the exercises used by the control group.

Keywords: compound exercises, physical abilities and 100m runners.

Introduction:

Training is the basis for developing and improving various physical, skill, psychological and physiological aspects through the use of several ways and methods. It has given positive results by influencing the level of achievement for various sports, including athletics activities in particular.

The training methods and ways for the athletics players varied, especially the speed activities, and the coaches and researchers were looking for the best that could serve the training process and increase the development of numbers, so the researchers turned to preparing complex and influential exercises in developing aspects of strength and speed to serve short-distance runners, including the effectiveness of running 100 meters from In order to raise the level of athletic achievement.

The (100m) event is one of the fastest track and field events, in which everyone seeks to achieve new things at the local and global levels, which require the development of physical capabilities such as maximum speed, speed endurance and acceleration, depending on the codification of training curricula that serve the development of this event, which requires

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conducting and several studies that contribute to the development of this event. Achieving the desired goal and ensuring that the efforts made by the player and coach are not lost.

Hence the importance of research into the effect of compound exercises in developing some of the physical abilities of youth 100-meter runners.

Research problem:

The 100-meter event is one of the very exciting speed event's that depend in its nature on the phosgene system and is linked to several factors such as the rate of speed, explosive power, maximum strength and speed power, which must be known to the player and monitored continuously and periodically in order to raise the level of achievement and enhance the positive aspects The race is very short, not exceeding 10 seconds, and in order to reduce the possibility of making a mistake or error, the rapid development of the achievement of running 100 meters in the world and the development of the technical performance of running has appeared recently. Purposeful codified training and continuous detection of the athlete's condition through advanced equipment, which ultimately helps in the development of achievement for short-distance runners. Where the researchers noticed by watching the Iraqi runners at the local and even international levels,

There is a clear weakness in the beginning of the launch compared to the runners of the world and the reason is not focusing on the explosive strength training significantly, so the importance of the research came in the use of compound exercises in developing some of the physical abilities of the 100-meter youth runners.

Research Aims:

1. Preparing complex exercises to develop explosive power and speed power for the members of the research sample.
2. Identifying the effect of compound exercises in developing explosive power and speed power, to the research sample.

Hypothesis:

There are statistically significant differences between the experimental and control groups in physical abilities.

Research Methodology:

The researchers used the experimental method for its suitability and the nature of solving the research problem, as this method is one of the most accurate, best and most efficient types of methods in reaching accurate results.

The research sample:

The research community was selected from the runners of Baghdad clubs for the 100-meter event for youth aged (18- 20 years), and their number (10 runners) were divided into two groups, experimental and control, each group (5) runners, representing the original research community by 100%.

Equipment, tools and means used in the research:

- sources.
- The Internet.
- Personal interviews for experts.
- The exploratory experience.
- Tests and measurements.

• Registration form for the results of physical tests and achievement.
• Data form.
• Statistical means.
• Measuring tape 50 m - 100 m.
• An electronic stopwatch of the type KISLO (5 pieces).
• A SAMSUNG laptop.
• Assistive work team.
• Medical scale (1).
• Cones (10).

Tests:

1- Long jump from stability position (1.93).

Test name: long jump.
Purpose of the test: To measure the explosive power of the legs in the long jump forward.
Tools used: a suitable place for jumping, with a width of (one and a half meters) and a length of (three and a half meters), and the place must be flat, free of obstacles and not slippery, measure tape and foot scan device.
Performance: the place of the jump is delineated by parallel lines, each of which indicates the distance between it and the ascent line in meters. The runner stands behind the starting line with the feet slightly spaced and parallel, as the two feet touch the starting line from the outside, and the pointer is on the foot scan panel placed at the starting line outside the hole. The taster begins by swinging the arms back with bending the knees and leaning forward a little, then jumps forward to the maximum distance possible, by pushing the extension of the knees with swinging the arms forward.
Registration: The measurement is begun from the starting line to the last part of the body that touches the ground towards the jump line. The starting line is 5 cm wide and is within the measurement. Each tester is given three attempts; the runner gets the best attempt points among the attempts and the value recorded by foot scan device.

2- Three hops with the right leg and three hops with the left leg (2.103).

Test name: legs hops.
Purpose of the test: to measure the speed power of the muscles of the legs.
Tools used: running track, cones, and measure tape.
Performance: Three hoops are made with the leg as far as possible after setting the starting line. Two attempts are given for each leg and the best attempt is taken, and it is measured with a tape measure. As for the performance of the test, the player stands so that one foot is forward and the other is back, then he makes three successive hoops on the leading leg.
Registration: The farthest distance for the three hoops of the right and left leg is recorded

3- 100m running test from the seated starting position (3.58).

Test name: 100m run.
Purpose of the test: Measuring the achievement of the 100-meter run.
Tools used: running track, stopwatches (3), signal pistol.
Performance: the runner stands behind the starting line of the (100m), then he hears the word (on the line). The runner sits on the line and stands still. When he hears the word (attend), he raises his hips a little higher, almost above the shoulders, and stabilizes. When he hears the starting signal, the runner starts running at full speed to End of the race line.
Registration: Each runner is given one successful attempt from three. The recorder records the time from the moment of the start of the test signal until reaching the finish line.

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Pre-tests:

After completing the exploratory experiment and avoiding difficulties and obstacles, the researchers conducted a set of pre-tests on the research sample. The tests were implemented after the researchers explained how to perform the tests and their sequence in brief.

The researchers worked to establish all the conditions related to the tests such as the place, time, method of implementation, the members of the assistant work team and its location in order to work as much as possible to create the same conditions during the post tests.

Compound exercises applying:

The researchers prepared the compound exercises based in his preparation on special scientific sources in athletics short distances (100 meters), as well as benefiting from the opinions of some experts and specialists, in the field of sports training science and athletics coaches, and the researchers deliberately used compound (physical) exercises that work on Raising the level of physical and functional abilities of short-distance runners 100 meters and the possibility of developing these capabilities Raising the level of runners' abilities to achieve a better level of performance, the researchers implemented the training program prepared from the compound exercises on the experimental group, while the control group was left to work according to the typical program prepared already by they are coach.

- The curriculum continued to be applied by (8) weeks, (3) training units per week.
- The compound exercises were implemented in the main part of the training unit for a period of (30-35) minutes.
- The researchers relied on adjusting the components of the training load (size, intensity, and rest) according to the level and ability of the runner, relying on some scientific sources and personal interviews in the field of sports training as well as the exploratory experience.
- The intensity of training was calculated according to the ability of the runners.
- The intensity of the training units reached (85-100%) in the strength that is distinguished by its speed power and explosive power.

Post-tests:

The work team under the supervision of the researchers conducted post tests on the research sample in the Ministry of Youth and Sports, and the researchers was keen to provide the same conditions and requirements in pre-tests to get the best results.

Statistical means:

The statistical data was processed using the ready-made software system (SPSS.

Result:

Table 1 Control Group

#No	Tests	Measuring unit	Mean	S.D	t	Sig
1	Long Jump	M/Cm	0.064	0.021	6.532	0.003
2	Three Hops	M/Cm	0.100	0.028	7.730	0.002
3	100m Running	S	0.184	0.212	1.937	0.125

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* Under indication level 0.05 & 8 free degree.

Table 2 Experimental Group

#No	Tests	Measuring unit	Mean	S.D	t	Sig
1	Long Jump	M/Cm	0.200	0.206	2.168	0.096
2	Three Hops	M/Cm	0.132	0.044	6.650	0.003
3	100m Running	S	0.240	0.045	11.853	0.000

Discussion:

Through what was shown above, the researchers attribute the reason for the development of the experimental group over the control group to the effectiveness of the guided exercises given to the experimental group, as these combined exercises worked to develop the physical abilities under research as they are scientific and studied exercises and were given in a codified manner according to the capabilities and capabilities of the research sample, as these exercises were graded Beginning in terms of intensity, from easy to difficult and from simple to complex, which led to the implementation of the exercises in an optimal way that ensured the development of the experimental research sample members, as giving physical exercises in a systematic and deliberate manner leads to the occurrence of the desired adaptations from training and vice versa, giving exercises in a systematic and deliberate manner Random whose results are negative and leads to the lack of the required development due to the lack of the necessary adaptations necessary for the development to occur, as the speed characteristic of the working muscles and their kinetic range are among the most important physical variables that must be available for short-distance runners, through the use of the large muscle group in the body led to the development of this ability Because these muscles are of great importance in the performance of motor skills with a distinctive force and speed, as has shown The muscular performance of runners is better than the use of small muscles, and this is consistent with what was indicated by (Alawi and Radwan, 1989) that "loads that use large muscle groups in the body show the muscular capacity of the individual better than loads that use small muscle groups" (4.81),

Through the researchers' adoption of modern methods according to scientific methods in terms of the rated loads that suit the level of the runners, it had an impact on this difference between the two groups in developing physical ability, as the rest periods between repetitions and between training units were appropriate for the effort, as well as the gradation in the training load. , as the researchers' interest in setting the standardized training volumes and stresses led to the emergence of moral differences in favor of the experimental group, and the researchers attributed this to the coach's lack of interest in gradual training loads in terms of appropriate sizes, stresses and rest for the purpose of developing those abilities as well as following the playing style as a training method for more than one unit Training, and agrees with these results (Zuhair Qassem al-Khashab et, 1999), as he mentioned that "gradation to reach the best level of performance has become an important rule in training and that gradation means the progress of the training plan according to the gradient from easy to difficult, and from simple to complex", and this is consistent with What was indicated by (Al-Qaddoumi, 1998) that "the principle of specificity in training means that training includes movements similar to the nature of performance in the exercised activity" (5.32), and the researchers attributes This progress relates to the exercises that the researchers used within

the compound exercises for the sample and the diversity of these exercises, which aimed to develop the main physical abilities (maximum speed, explosive power, and speed-power),

Which the 100-meter runner needs, which have an effective role in running technique and producing successive runner need it for Fast lead in the result to obtaining a better achievement during the running distance as well as the good coordination reached by the runner between the production of force and the appropriate speed in the running steps, which affected the length of the step and its frequency in proportion. This was confirmed by (Kamal Darwish and Muhammad Sobhi Hassanein) that the provision of strength and speed capabilities does not mean in all cases that the athlete has a distinctive strength in speed that can benefit from it in sports effectiveness unless he has the skill to combine the required and possible ratios of the two qualities with what the practiced activity requires From the foregoing, the researchers conclude that the apparent development in the physical abilities of the members of the experimental group compared to the members of the control group came as a result of the standardized compound training received by its members, which led to a qualitative adaptation of the organic organs and their functions, and (Robert) points out that "the orientation of the training process is to develop Physical qualities that improve technique are important in achieving the best achievements" (6.8).

Conclusions:

1- There is an effect in the exercises followed by the experimental group in improving and developing the achievement.

2- There were significant differences between the two research groups in the post-test for the variables

(speed and power) and for the benefit of the experimental group.

References:

1- Muhammad Hassan Allawi and Muhammad Nasr al-Din Radwan: Motor Performance Tests, 3rd Edition, House of Arab Thought, Nasr City, 1994.

2- Kamal Abdel Hamid and Mohamed Sobhi Hassanein: Physical fitness and its components, Egypt, Dar Al-Fikr Al-Arabi, 1987.

3- Zaydoun Jawad Muhammad: The effect of using percentages of the creatine phosphate compound in developing muscle strength and achievement among the elite 100m runners, Master's Thesis, University of Baghdad, College of Physical Education, 2004.

4- Muhammad Hassan Allawi and Muhammad Nasr al-Din Radwan: Skill and Psychological Tests in the Sports Field, 1st Edition, Cairo, Arab Thought House, 1989.

5- Abdel Nasser Al-Qaddoumi: a comparative study between the use of biometric exercises and the usual training on the oxygen capacity of volleyball players, An-Najah University Journal, Vol. 12.

6- Robert Vaughan: Training and Immune function, The IAAF, Quar .Mag ,VOL,10.NO, 1 , 1995.