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The effect of special training using some auxiliary tools In the development of special strength and achievement of throw by youth

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Abstract

As the use of these various auxiliary tools by projecting gradual resistances during the performance of the stages of this activity without prejudice to the motor paths required during the performance, especially for the stages of throwing and throwing, and this helps to increase their efficiency, and this problem summarizes the existence of limits and a level of this effectiveness in Iraq that cannot be overcome, and this What made the achievement not rise to the Arab, Asian, and Olympic levels, so the researcher resorted to using exercises and training aids to raise the level of physical abilities necessary in throwing the discus, which is the explosive and fast power, where the exercises included according to the performance of each stage and the study aimed to prepare special exercises using some Auxiliary training tools and to identify the impact of these exercises in developing the explosive and rapid power and the digital level of the research sample . As for the tests used in the research, they included tests of explosive and rapid strength and the digital level And the researcher conducted the main experiment for the period from Sunday, 8 / 3 / 202 0 until Sunday , 5 / 3 / 202 0 Which included 24 units, 3 training units per week for a period of eight weeks , and the researcher concluded that the exercises used using rubber ropes, jumping boxes and other devices that were performed according to the effective performance had an impact on developing the explosive and rapid strength of the muscles of the legs, trunk and arms

Keywords*: special training, auxiliary tools, special strength*

Introduction

Sport training is one of the basic sciences in the development of various physical and physiological aspects. Several researchers have dealt with the practical applications of this science in several ways and methods. It has given positive results by influencing the level of achievement for various sports, including athletics activities in particular. All sports need special physical abilities that the player must have to achieve the highest levels of sports in these games, as these abilities reflect the special and necessary requirements for the type of physical activity that the individual exercises and specializes in to the higher levels in sports. (Alawi: 81:1992) From the aspect of

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physical fitness, special physical abilities mean the efficiency of the fitness components of the type of activity to improve the requirements of their motor activity. (Sari Ahmed Hamdan and Norma Abdel-Razzaq: 35:2001) The explosive power has occupied great importance, especially within the training curricula of various sporting events, as it is one of the main factors for performance according to the need from them. The degree of mastery of the sports skill while gradually increasing the resistance enables the development of this ability according to the correct criteria for the skill of effectiveness, as the performance of explosive strength training must match in order to directly affect its increase including protection for the athlete from injuries and damage. (Loverkuntov and others: 46:2006) The use of assistive devices in the implementation of skill performance exercises accompanied by an improvement in strength has become an important matter, as the preparation of exercises according to these devices depends on the perfection of performance, and on the integration of muscle strength, and the basic condition for the effect of special strength is to allocate exercises for the stages of shooting performance.

Discus throwing activities are activities that require high kinetic compatibility and achieve balance and interdependence between their technical stages in order to achieve integration in their mechanical and skill performance. I was interested in developing these capabilities, but this did not meet the ambition to achieve Arab, international and Asian excellence. On the other hand, creativity in training and innovation of devices are among the requirements that are consistent with the progress made in the training process in Iraq for this game. The researcher felt that there is a problem in the special strength training of During his long field experience with this event (a player and a coach), this problem is summarized by the existence of limits and a level for this activity in Iraq that he cannot overcome, and this is what made the achievement not rise to the Arab, Asian, and Olympic levels, so the researcher resorted to using exercises and training tools to improve The level of physical abilities necessary in throwing the disc, which is the explosive and rapid strength, as the exercises included according to the performance of each stage as the use of these various auxiliary tools by projecting graduated resistances during the performance of the stages for this activity without disturbing the motor paths required during performance, especially for the throwing and throwing stages, and this helps to increase their efficiency. The study aims to prepare special exercises using some auxiliary training tools and to identify the effect of these exercises in developing explosive and rapid power and the digital level of the research sample. The researcher assumes that there are significant differences between the tribal and remote tests in favor of the post tests for the sample under research.

Research methodology and field procedure

The research approach: The nature of the problem is what determines the research methodology used, and therefore the researcher used the experimental method to suit the nature of the problem by designing a single experimental group with a pre and post test.

The research sample: Al-Baha selected the sample in a deliberate way from the discus throwers, the youth category and the ages (under 20 years) from the Diyala clubs, which numbered (6). According to what is shown in Table (1), the coefficient was between (-0.034, -0.719, -0.461), which values are confined between (-3, +3), which indicates the homogeneity of the research sample.

Table (1) Tests of homogeneity for height, age, weight, and skew modulus between the two experimental groups

skew modulus	standard deviation	Mediator	the middle	**Statistical means Variables**
0.034-	0.004	1.67	m1.78	height
0.719-	0.77	23.50	years 23.33	the age
0.220-	3.37	65.50	kg 64.67	weight

devices and tools used in the research : the scale device for measuring weight and length, 20 discs of different weights (1 kg, 1,50 kg, 1,750 kg, 2 kg), measuring tape 50 meters long, stopwatch, whistle, medical balls, rubber and ordinary ropes (linen) , Training balls of different sizes and types, platforms and barriers of different sizes and heights.

A. ***The tests used in the research***: Included tests of explosive and rapid strength As follows.

1. **Explosive force test**: Objective: To measure the explosive force (arms, torso, legs).
First: Arms: Pushing a medicine ball weighing 3 kg from the front of the chest to the farthest distance.
1. Objective: To measure the explosive force of the two arms.
2. The tools used: a medicine ball of weight (3 kg), a measuring tape, a function mark to determine the distance
3. Description of performance: From a standing position, the tester carries the ball in front of the chest, and then pushes the ball with both arms to the farthest distance, with the maximum speed and force possible, for one time.
Secondly. The torso test: (raising the torso from a prone position on a flat platform. (Al-Tikriti: 183:1985)
1. The purpose of the test: to measure the explosive force of the trunk
2. Tools used: flat bench, stopwatch, discs of different weights (3) kg.
3. Performance description: The player lies on a flat bench so that the torso is outside the bench and the player is fixed by a member of the auxiliary work team sitting on his legs. The tester puts a weight disk (3 kg) behind the neck and begins the exercise by lowering the torso down and then raising it up as far as possible. The performance time is measured from the moment of decline and ascent to the highest point reaches the trunk.
Third. The two-legged test: (the long jump from stability). (Allawi and Radwan: 95:1994)
1. Objective: To measure the explosive power of the legs.
2. Tools used, apron, tape measure, starting line width (5 cm).
3. Performance description: Standing, bending and extending the knees, then jumping to the farthest distance. The measurement is from the starting line to the last part of the body that touches the ground. Then the measurement is recorded in a form for the players.

2. **Speed test:**
First: Arms: Vertical stretching of the arms for a distance on the rope from the lying position. (Allawi and Radwan: 93:1994)
1. Objective of the test: To measure the speed characteristic of the two arms.
2. Tools used: climbing ropes, measuring tape, chairs or a seat not less than (35 cm) in height, sticky marks on the rope, and a high table.
3. Description of performance: The tester sits on the bench and then extends the arms up to the maximum possible distance without lifting the seat from the chair so that the

rope is gripped with the hands higher than a fist and the rope is between the thighs, then we record the distance in the registration form for the test.

Second: The torso: the abdomen test with a back test for 10 seconds (Qais Naji, Bastawisi Ahmed: 329: 1987).

1. Objective of the test: To measure the speed characteristic of the trunk.
2. Tools used: stopwatch, hall, terraces, registration form.
3. Description of performance: Lie down, bending the torso forward and fixing the legs (10 seconds), counting after that, the number is recorded. Then hanging on the bar, raising the legs at an angle (90 degrees) parallel to the ground.

Third. Legs: Partridge to the farthest distance (right, left) for a period of (10) seconds. (Qais Naji, Bastawisi Ahmed: 344: 1987)

1. The objective of the test: To measure the speed characteristic of the legs.
2. Tools used: stopwatch, tape measure, wide yard, registration form.
3. Performance description: Standing on one foot of the partridge to the maximum distance on a line drawn on the ground in a time of (10 sec) without stopping or touching the ground with any part of the body other than the partridge's foot and then return to the second foot and measure the level three times and take the best attempt.

Fourth - Testing the digital level of discus throwing: - The digital level of discus throwing was tested according to the international law of athletics.

B. ***Survey experience***: The researcher conducted an exploratory experiment on Thursday (2/27/20/20) on the sample members in order to achieve the following objectives: Adjust the performance of the devices used. Identify the obstacles and errors that accompany the research procedures. Identify the time allocated to the education and training departments; knowing the suitability of the outdoor playground in performing the research experiment.
C. ***A tribal tests***: The researcher conducted the tribal tests on Tuesday and Wednesday 3 - 4 / 3 / 202 0 On the basis of which special trainings are developed and implemented, as follows: Day 1: Explosive and rapid strength tests. Second day: Digital level test.
D. ***The exercises used in the training curriculum***: The researcher conducted the main experiment for the period from Sunday 8 / 3 / 202 0 until Sunday, 5 / 3 / 202 0 which included 24 units, 3 training units per week for eight weeks. It included exercises using some devices and tools (rubber ropes, medical balls, wooden platforms, jumping boxes, and barriers) that can contribute to developing the performance level of the sample members, as well as exercises to develop special physical aspects related to performance stages. The intensity of the exercises was determined by the researcher's dependence on the number of maximum repetitions in a specific time and body weight with regard to hurdles exercises, ropes exercises and performance exercises. The maximum length (stretch) of the rope was adopted as well. The training load was gradually increased after every two weeks, as the exercises were repeated every two weeks, and the training load increased gradually the next two weeks and so on.
E. ***Post-tests:*** The researcher conducted the post-tests on Wednesday and Thursday on 6-7 / 5 / 20, taking care to provide all the conditions in which the pre -tests were conducted.
F. ***Statistical means***: The researcher used the statistical package (SSPS) to process the results of his research.

Presentation and discussion of the results

1. **Presentation of the results of the explosive force test of the arms, torso and legs of the research sample**

Table (2) it shows the results of the explosive force test for the arms, torso, legs and the numerical level of the two experimental groups for the pre and post tests and their comparison with the T- test

T	the test	measruing unit	tpretes		post test		Calculated T value	Tabular T value	significant level
			s	±	s	±			
1	**arms**	m/s	5.28	0.38	5.98	0.43	12.28	2.57	significant
2	**trunk**	Sec.	0.38	0.041	0.30	0.029	14.64		significant
3	**feet**	m/s	2.28	0.05	2.49	0.07	8.73		significant
4	**digital level**	m	47.13	3.58	**43.13**	**3.42**	7.93		significant

At a degree of freedom (5) and a probability of error (0.05)

2. **Presentation of the product of the rapid strength test of the arms, torso and legs of the research sample**.

Table (3) it shows the arithmetic mean, standard deviation, and the calculated and tabulated T value in the pre and posttests of strength characterized by speed (arms, torso, legs (right, left)

T	the tesT	measruing unit	pretest		post test		Calculated T value	Tabular T value	significant level
			s	±	s	±			
1	**the arms**	m/s	3.38	0.54	4.26	0.74	8.02	2.57	significant
2	**Trunk (stomach)**	Sec.	13.33	1.63	18.83	2.13	16.12		significant
3	**the trunk (Back)**	Sec.	17.66	1.032	23.50	1.64	1452		significant
4	**Feet (right)**	m/s	32.15	1.82	32.93	1.72	6.02		significant
5	**Feet (left)**	m/s	33.01	2.58	33.43	2.069	1.33		insignificant

It is noted from Table (3) and (4) that the calculated (T) values for the specific physical variables of the research sample were statistically significant under the level of ≤ 0.05 and the degree of freedom (5), and this indicates a significant development in the results of the sample as a result of the exercises that were used. The presence of significant differences in the explosive and rapid force variable for the research sample, where the researcher used some devices and tools to develop this trait, as (Talha Hussein Hossam Al-Din) stated, "The growth of muscle strength using exercises for devices and tools exceeded the growth of some species." (Hossam El-Din: 197:1994) He also agreed with what was mentioned by (Mohamed Mahmoud Abdel-Dayem and others) "that the rate of strength gained by using exercises with equipment is more than anthropometric exercises." (Al- Dayem et al.: 463:1993) Since the force characterized by speed consists of force and speed, it can be increased by increasing the two components, and usually the best way to increase it is the force component. (Issam Ali and Muhammad Jaber : 1992:1999) and (Bowshurter) points out that "the ability to force characterized by speed and the ability to maximum force are among the physical capabilities that have a clear impact on achieving achievement in jumping and jumping activities, and this direct and sure relationship between

raising the level of achievement in jumping activities. Jumping is related to the ability of the force distinguished by the speed and the possibility of its development. (And Zuckerrotter: 404:1988) The researcher believes that one of the main duties of the discus thrower is his correct sense of using the required force during the performance stages effectively during the race to obtain an appropriate speed rate to benefit from it in achieving the largest horizontal distance The discus (achievement), as it became clear that the achievement was clearly affected by the development of the explosive and rapid force of the arms, legs and trunk, and to maintain, as much as possible, the rate of these forces during the performance stages, as the discus throwers achieve a limited percentage in the rate of their maximum speed commensurate with their control over the performance stages, and that This principle has been well applied by the members of the experimental group through the improvement of speed rates during each rotation of the body in the circle, as it appears that the continuation of muscle work for a relatively specific period and the application of A quick movements without a significant drop in speed. The distinctive thing for the members of the experimental group was as a result of the improvement of their special strength due to the training curriculum, where (Adel Abdel Basir 1999) sees that the ability to work at a high degree of speed means the development of the body's efficiency in producing energy and maintaining high rates for the largest possible time period. (Abdul-Basir: 125:1999) and that the discus throwing competition needs to link physical abilities to each other for the purpose of developing private aspects When performing, performance strength is one of the most important physical abilities, which means that performance is characterized by speed and strength, and as a result of the association of these abilities with each other, it is a complex physical ability that needs competition or training requirements in order to continue to perform maximum physical effort throughout the effort, so the Strength capacity specific to performance means the ability of an individual to fulfill requirements associated with a specialized type of activity without dropping in level and under conditions of competition , The long nature of the discus competition and its high speed performance require strong muscles capable of controlling this performance, so the development of rapid strength This competition is very necessary, which means "the ability to perform work with great muscular strength, and therefore this means that the player continues to exert a quick force for as long as possible without the appearance of fatigue, and exerting this force certainly gives a continuity to maintain the acquired speed. " (Abdul-Khaleq, Essam El-Din: 151: 1999)

Conclusions

In light of the results obtained by the researcher, the researcher concluded that the exercises used using rubber ropes, jumping boxes and other devices that were performed according to performance were effective in developing this explosive and rapid strength of the muscles of the legs, trunk and arms of the sample members that were associated with the work of the muscles working in the shoulders and arms to overcome the total body mass as the level of their muscular adequacy in these groups has been consistent with their training levels and that the use of devices and tools according to performance requirements and the appropriate means of training has achieved a tangible impact in the development of special physical abilities and the digital level of the research sample members

The researcher recommends confirming the use of training aids used in due to their effect on increasing the physical efficiency and the mechanical conditions accompanying the performance of the players. Work on the diversity of training aids

because of their importance in requiring the players according to their abilities and their physical, technical and psychological preparations, some of them achieve a high level and some of them need a variety of means to form He has correct concepts and a supplementary study of this study using other training methods to confirm the development of the rapid strength of the legs and explosiveness for their importance in the effectiveness of discus throwing, especially the stage of throwing and throwing

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Appendix (1) of the special strength exercises used in the research
First week

today	exercise name	intensity	the size	Rest betwee	Rest betwee
Saturday	1. Throwing a medicine ball weighing 1 kg against the wall from the throwing position.	%80	3×8	5 : 1	1,30 m
	2. Throwing a medicine ball weighing 2 kg from the position of throwing and throwing.		3×8	5: 1	1,30 m
	3. From the throwing position, grab the fixed rubber rope and perform the last throwing stage.		3×8	5: 1	1,30 m
	4. From the position of preparation for throwing, holding the fixed rubber rope and performing the throwing process.		3×8	5: 1	1,30 m

Sunday	1. Running alternately over hurdles with a height of 20 cm, spaced at a distance of 2 m		2×10	5 : 1	1,30 m
	2. Jumping on boxes with both legs spaced 1,50 m apart	%85	2×8	5: 1	1,30m
	3. Jumping barriers with both legs.		3×8	5: 1	1,30m
	4. Jumping on both sides of the flat feet together 10 jumps		3×10	5: 1	1,30m
Tuesday	1. Throwing medical balls from stability.		2×8	5 : 1	1,30m
	2. Throwing weights from stability.		2×8	5: 1	1,30m
	3. Lie on the back on a wooden platform with a medical ball fixed to the chest with both hands and perform the grinding process.	%85	3×8	5: 1	1,30m
	4. Lie on the stomach on a wooden platform with a medical ball fixed behind the neck with both hands and perform a movement of raising and lowering the torso.		3×8	5: 1	1,30m