Following the use of the Dilorme system with weight training in the faces of muscle strength and some of the kinmatic variables of theskill of sending tennis

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Abstract

The scientific development taking place in the field of sports, imposing new horizons limitless, in the sports science, including the science of sports training, which has developed rapidly, and his theories have taken a new curve to keep up with the modern trends in sports training,

Weightlifting training is one of the methods used in the training of many sports, and the training of strength using weights has become the first step towards the exercise of any sport and has proven that weight training is one of the most important factors that contribute to improving the level of performance and the development of fitness as it is not limited to the development of strength

Muscular) maximumstrength, strength, and strength(it extends to include the positive effect of the efficiency of the heart work (Juma, 2002, 198), and "the use of a sport, activity or training technicality other than the activity or the main sport,or theuse of other sports activities for the purpose of maintaining physical abilities. [Mohammed]Jaber Berriq and Ihab Fawzi Al Badiwi, 2010,   6) And Delorme system is one of the training systems for weightlifting training, which is used to develop the muscular strength of tennis players and the territories is one of the events that need to make a high effort during the performance of the basic skills of offensive tennis (dispatch of tennis) because it is considered a break in getting a point in getting a point in winning the match or the skill h1 skill needs strength, the problem of research isnot giving the necessary skills of the period of strength for the period The use of weights, which leads to a decline in the level of physical abilities and skills,so the researchers worked based on the above participation through their research by giving some scientific solutions to address the problem through the use of delorme system exercises during the period of special preparation to maintain the level of performance of physical abilities and skills in tennis players, and the importance of the research in conducting a study to find out the effect of the use of the system delorm on the face of muscle strength and some kinmatic variables of the skill of the transmitter with tennis to try to get the best results and the highest achievement in order to achieve victory In the game.

3- The methodology of research and its fieldprocedures:

3-1 Researchmethodology:

The researchers used the experimental method to suit the nature of the research problem, in the style of a single experimental group with pre- and post-testing

3-2 research sample:

The research sample was tested in the deliberate manner of the 5 players of the specialized school in Diyala province who make up 100% of the sample

3.2.1 Homogeneity of the sample: Homogeneity was performed on the research sample in the variables of age, height and weight table (1) between that

Table 1 between homogeneity in height, age and weight variables

Variables	Arithmetic medium	Broker	Standard deviation	Twisting coefficient
Weight	66.5	66	3,5	-0,62
Length	175.5	177	5.5	-0,80
age	17.05	17	1, 3	0,03

The distribution is normal and the sample is homogeneous if the values of the twisting coefficient are limited between ±1 and the above values are limited between (-0.84+0.06).

3- 3 devices and tools usedsearch:

 3-3-1 searchdevices:

 3-3-2 searchtools:
1. Data registration form and test results.
2. Arab and foreign sources and the Internet.
3. Observation and experimentation.
4. Assistant staff.

3.4 Skilled physical tests and some kinmatic variables used in research

First- Tests carrying the strength:(throwing the medical ball weighing (2kg) from above the head towards the wall for (60)tha:

The purpose of thetest: - measure the bearing of the strength of the muscles of the arms.

Devices andtools: - medical ball weighing (2kg), electronic stopwatch, u-frame gauge, ADHESIVE TAPE, WALL.

TESTSPECIFICATIONS: - THE LABORATORY STANDS BEHIND A TAPE STICKER PLACED ON THE GROUND in advance and DISTANCE (2,50) M FROM THE WALL CARRYING THE MEDICAL BALL WITH BOTH HANDS BEHIND the head and when hearing the start SIGNAL THE LABORATORY BEGINS TO THROW THE BALL FROM ABOVE the HEAD TOWARDS THE WALL UNTIL the end of THE TIME SPECIFIED IN THE TEST FOR (60)TH, TO PERFORM ALL THROWS

ABOVE THE HEAD AND DOES NOT COUNT ANY throw that IS CONTRARY to the conditions of PERFORMANCE.

REGISTRATION: - THE LABORATORY CALCULATES THE NUMBER OF THROWS PERFORMED TOWARDS THE WALL DURING THE TEST TIME (60)THA.

II-Speed tolerance test (shuttlerun test 25m×8) from high start:-

The purpose of thetest: - measure the tolerance of the muscles of the legs.

Toolsused: - measuring tape - adhesive tape - stop watch - flat yard longer than 30 m - whistle.

Testspecifications: - Draws two parallel lines the distance between them (25)m the laboratory stands at the starting line and at the start signal runs at full speed towards the second line to touch it with his foot and then turns back to the starting line, repeats this performance (8) times to the distance traveled (25 m×8) = 200 meters.

Test instructions: - The laboratory gives two attempts and calculates the best try time.

Registration: - Records the laboratory the time it took to cut the distance by a second and its parts.

3. Strength tests characterized by speed: (Front-basedtest (Shenau) for (10) tha:

The purpose of the test: - Measure the strength of the muscles of the arms.

The necessary tools: - flat space area, stopclock, whistle.

Testspecifications: - The laboratory takes the position of the front altogether on the ground so that the body is in a straight position, and does not arch down or up,and after giving the starting signal the laboratory bends the arms to touch the chest to the ground and then return extended, and the laboratory continues to repeat this performance to the maximum number of times possible for (10)tha.

Registration: - Several one is calculated for each time the laboratory bends the arms and extends them in the correct way, and calculates and recordthe number of times the bend of the arms and extend them for (10)tha.

4. Explosive force tests:(test of the explosive force of the arms (pushing a medical ball weighing 2 kg in the arms):

The purpose of thetest: - Measure the explosive force of the arms from the sitting position.

Necessary tools: - medical ball 2kg,rope, single chair, measuring tape, chalk.

Testspecifications: - The laboratory sits on a chair holding the medical ball with hands, so that the ball is in front of the chest and below the level of the chin, and the trunk must be adjacent to the back of the chair, a rope is placed around the chest of the laboratory, so that the colleague holds the end of the rope and in a tight manner, in order to prevent the movement of the laboratory trunk forward during the payment of hands, to shorten the movement on the push of the ball with hands only, gives each laboratory two consecutive attempts.

Registration: - Giveeach laboratory two tries and record the best try.

V. Measuring the accuracy of the front ground strike in ground tennis.)

Age level: Suitable for students of universities, institutes and high schools.

Hardware and tools:21rackets, tennis balls number (21),regular playground, chalk, basket balls, measuring tape, registration form.

Actions:

-   The tennis court is planned on one side as shown in Figure5.

- A rope parallel to the grid is placed at a height of(7)feet from the ground and (4)feet fromthe net.

Three parallel lines are drawn between the transmission line and the base line and the distance between the lines(4.5)feet.

How the test is performed:

- The laboratory player stands in the middle of the base line (back line) point (a) while the teacher or assistants stand in the half of the pitch at point (B) and with it a suitable number of balls , the teacher strikes the ball to the laboratory behind the transmission line where the laboratory takes the appropriate position for the front strike and the performance of the strike to pass over the net and the bottom of the rope to drop the ball in the areas indicated in the form mentioned in the opposite half.
- The laboratory is given(5)attempts for the purpose of test training.
- The test begins by the laboratory performing the front strike(10)times i.e.(10)balls in the same way, with theballs being given to the laboratory in a similar way as possible.

Sign up:

- The ball that passes over the rope is given half the orthotic score that falls on it, knowing that the rope(4)feet above the net.
- The ball that passes from under the rope and falls on the ground inside the field in specific areas respectively, is given successive and different calendar grades and ranges in value from(5-1)degrees.

  The validity of the test as the index between(0.67-0.57) and achieved a stability of(0.75).

Sixth- For the accuracy of the   rear ground strike, the same procedures used in the front ground strike and on the same field, as well as the calculation of grades other than the method of performing the strike is different.

Seventh:The speed of the ball for the front ground blow through the video

Kick-off speed: The distance travelled by the ball by the scale of the drawing to the time taken and extracts the time taken by dividing the number of t that accompanied this change in distance on the camera speed

$$Speed = \frac{distance}{Time}$$

The test was filmed by video footage after experts nominated the speed test through q-distance, time with a Japanese-made camera measuring (8 mm) mounted on a triple-speed carrier (25) images /tha.

The camera was erected at a distance of 13.90 m from the player's area of motion for ball and at a vertical angle on the field of motion and the height of the center of the lens was from the ground (155 cm) and also used the researcher scale dhow length (1 m)

. Either how to calculate the speed of the ball or the speed of the result, which was measured by calculating the smallest distance travelled by the ball by the scale of the drawing scale divided by the time taken and measured by calculating the number of images that accompany this change multiplied in the time of the single image, i.e. the starting speed is derived from the following law.

$$\text{Launch velocity} = \frac{\text{distance}}{\text{Time}}$$

Eighth: The speed of the ball for the rear ground stroke by video imaging, the same procedures and measurements used in the speed of the ball for the front ground strike and the same measurements of the pitch except the performance of the method is different

3.5 Exploratory experiment:

The researchers conducted the first exploratory experiment on26/9/2019   on players from the main sample community, and the aim of this experiment was to know:

1. The time taken for each physical abilities test.
2. Make sure that the tools and devices used in the tests are valid.
3. Train the assistant team on tests, how to perform them and record results.
4. The validity of the selected field tests, and their suitability for the research sample.

3.6 Key trial procedures:

3.6.1 Pre- Tests:

Pre- tests were conducted on the members of the research sample and for the experimental group on Wednesday, 2/10/2019 at 9:00 a.m. on the Outdoor Tennis Court of Diyala University/ Faculty of Physical Education andSports Sciences and with the help of UncleL'steam,following:

1- Throw ing the medical ball weighing (2kg) over the head towards the wall for (60)tha
2- Shuttle running test (25m×8) from high start
3- Front-based test (Shenao) for (10) w
4- Test of the explosive strength of the arms (pushing a medical ball weighing (2)kg in the arms)
5- Measuring the accuracy of the front-end ground strike in ground tennis
6- The speed of the ball for the front ground shot by the video.
7- The speed of the ball for the rear ground stroke by video

Procedure before pre- testing:

1. Explain what is required of each athlete from the research sample and from the assistant team.
2. Perform a good warm-up before training.

3.6.2 The use of the Dilorme weight training system:

Based on interviews with trainers and experts[*] in the field of sports training for ground tennis, TheHoon was prepared for the Delorm training system, and was carried out over a period of (eight weeks) and over (2 units) per week (Monday, Wednesday) of a week, training unit time (90 minutes), dell exercises carried out   A time of(15 minutes) within the physical setting in the main section of the training unit and after the preparatory preparation and by the reality of (4-5 stations) in each training unit, and these stations are carried out continuously without stopping except the time of transition from one station to another, and then repeat those stations between (6-8 times).

The researcherandn did not interferein the components of the training unit except the physical section (independent variable - cross-fat exercises) applied to the experimental group in the research sample

The training curriculum started on 6/10/2019 until 6/12/2019[*].

3.6.3 Post-tests:

After completing the implementation of the vocabulary of the proposed training curriculum over an eight-week period, the post-tests of the experimental group research sample were conducted on Sunday, December 8, 2019 at 9:00 a.m., and the researcherandn followed thesamepre- test conditions and procedures in terms of space, time, sequence, sequence, tools used and the auxiliary team to maintain that there would be no change that might affect the search results.

3.7 Statistical means:

The researchers used the Statistical Bag (SPSS) according to the following laws:

4.1 Presentation and discussion of results

Shows the computational circles, standard deviations, t.test value and error ratio between the pre- and post-tests of the group.

T	Tests	Unit of measurement	Computational circles	A	STD	t-test	Error level	Indication of differences
1	Throwing the medical ball weighing	Number	Previous	25.25	1.50	13.75	0.000	Spiritual
			Next	35.85	2.31			

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[*] Seen: Supplement (1).

	(2kg) over the head towards the wall for 60 (tha)						
2	Shuttle running test (25m×8) from high start	Time	Previous	22	3.98	11.51	0.000	Spiritual
			Next	28.5	3.55			
3	Front-based test (Shenao) for (10) tha	Number	Pre-	4.25	1.45	8.55	0.001	Spiritual
			Post	5.75	1.65			
4	Test of the explosive strength of the arms (pushing a medical ball weighing (2)kg in the arms)	Distance	Pre-	5.45	3.25	6. 65	0.001	Spiritual
			Post	7.65	2.07			
5	Measuring the accuracy of the front-end ground strike in ground tennis	Degree	Pre-	11.05	5.52	13.85	0.001	Spiritual
			Post	22.05	6.22			
	Measurin	Degree	Pre-	13.55	5.86	11.2	0.00	Spiritual

6	g the accuracy of the back-stroke in ground tennis		Post	18.45	6.05	3	1	
7	The speed of the ball for the front ground shot by the video.	Degree	Pre-	13.65	5.88	12.11	0.001	Spiritual
			Post	19.33	6.23			
8	The speed of the ball for the rear ground stroke by video	Degree	Pre-	12.25	5.65	9.12	0.001	Spiritual
			Post	15.55	6.22			
9	Shoulder corner	Angle	Pre-	173	8.50	8.69	0.013	Spiritual
			Post	174	8.40			
10	Elbow corner	Angle	Pre-	167	5.20	2.67	0.14	Spiritual
			Post	166.7	5.51			
11	The angle of the forearm racket	Angle	Pre-	132.79	6.00	2.50	0.130	It's not moral.
			Post	132.43	6.17			
12	The angle of the bat's mile	Angle	Pre-	17.73	0.66	2.15	0.15	Spiritual
			Post	18.26	0.55			

4.2 Discussion of results

By noting table 2 that there is a development of post-tests and due to the development due to the development due to the continuation of training using the dilor exercises developed by the researchers in the training program and applied correctly and correctly., it is known that each sports event depends on certain muscle groups vary from game to game according to specialized sports and the fact that the game of tennis ground of games characterized by players The strength of the muscles of the arms and legs is greatly therefore it was necessary to pay attention to these totals through the organized repetition of exercises and the gradual increase of repetitions as the results obtained proved that the training method used (dilorme system with weight training) was successful in the development of the aspects of muscle strength through the retraining during the training unit and several times to develop these physical qualities. Since the nature of this method requires the performance of the exercise in it from the sample of research as strongly and as short as possible i.e. work to connect strength and speed together, because the characteristic of the strength of speed develops through training in the connection of strength and speed and thus to increase the compatibility capacity between the two and this is what is characterized by the trained tennis players, which we find in their performance consistency and aesthetic by linking the two components together). (MohammedNasreddine Radwan, 1985, 104.The researchers agree with his stress (Hammad 1998) the higher the level of performance the more the need to use scientific methods that help to raise the level (Hammad, 1998. 198)

The strength-level characteristic sits because of its development of the pilot group,
which is the correct use of the proposed training method and the characteristics and features that have helped its development. And he can perform all the duties imposed on him strongly and quickly and the least mistakes any able to bear the burden of playing and this is our goal of this way moreover is the development of the strength of the players of the ground tennis because of its importance by the continued players in their violent struggle throughout the game without reducing their ability to work that comes By mixing the tolerance of force in particular with speed and the emergence of an element that can be called "performance tolerance", i.e. the ability of the individual to continue to overcome repeated resistances using a high speed below the maximum) (AliAl-Beek and Shaaban   Ibrahim:1985,67)

As for the strength of the country, although there are significant differences, there is a difference.
Apparently in the computational circles and in favor of the post-test and the researchers attribute this to the training used by the delorme system, which developed the muscle strengths, which in turn affected the development of the strength of the characterized speed, as well as that the system delorm addressed the trainings of the development of the physical force The rapid performance of the maximum number of repeats during (10) tha and this is stated (Hakem, 2004) that the development of the power characterized by speed depends on the ability of the individual to merge the two components (forceandspeed) and output them in one template (Hakem, 2004,86)
With regard to the skill and the front and back blow of ground tennis, the researchers
   attributed the reason for the development of skill to the effect of the training curriculum

of the diworm system using weights, which led to the development of the most muscular strengths the subject of research and this development had a major impact on the development achieved This is whatHantosh and Saudi, 1988, emphasized to the importance of the physical aspect in being the cornerstone of the development of the mahari's side by saying that "themadi will not be able todevelop the maha It is well known that the character of the force and its different types are notdeveloped spontaneously and spontaneously, but through organized and planned training in accordance with scientific formulas, as well as the appropriate and correct selection of exercises used to develop this characteristic, particularly (additional load exercises) whether by weight and body weight because of its direct impact on strength, particularly strength. This is what many experts and specialists in this field have pointed out: (Mohammed Hassan Allawi) (Mohammed Hassan Allawi, 1975, 88,89)

 Either the distance between the elbow joint and the longitudinal axis before hitting the ball where we find that the distance achieved for the pre- test was low compared to the post-test and this greatly affects the values of the peripheral speed achieved, in addition the distance achieved affects the variables of speed surrounding the strike arm.

Through the above, it is important to transfer the mechanical motor of the body to increase the efficiency, efficiency or strength of performance through (controlling the equity of the diameters of the body parts can cause increased angular momentum or decrease and according to performance)

Hence the importance of the maximum angle of the trunk arc in the performance of the rear multiplication and this means there is a difference in the angle of the maximum trunk arc in the stage of returning the ball so the post-tests were better by achieving a lower amount of angles, and this means there is a movement transfer suitable for performance to maintain the amounts of force produced due to the (trunk constitutes 50% Almost the total body mass according to the results, experiments and research of some scientists and researchers, and due to the large mass of the trunk, the amount of angular movement resulting from the movement of the angular trunk is very large when compared to the amount of movement of other parts) (FrankAbdul KReemAl Fadhli, 2007, p115)

 While it was a variable angle of the shoulder joint which revealed to us that the pre-test through the striking arm and its point of contact with the ball was far away through the values achieved for the angle of the shoulder joint and thus the difficulty of the process of moving and arcing the trunk, the ball is more bexcept and therefore not good timing when performing in the front beating.

 These variables affect a great deal on the next stage, which is the multiplication phase, which is complementary to the previous stage, where the values of biomechanical variables in the multiplication phase reached the blind with the variable angle of the wrist joint and is measured from the back where the striking palm of the ball after the contact

wraps on the bat where the ball earns a suitable rotational speed, which increases the speed of its fall in the specified place and this occurs in a short period of time

Either the angle of the elbow joint of the back arm and the arm was well outstretched when hitting the ball "because the great power of the biceps muscle depends on the degree of its integrity above thehumerus (ExpressAbdul KReem AlFadhli wawahbi Alwan al-Bayati,2007, 211) This is one of the most important good specifications of the successful striker in achieving a high point to seek the striking hand with the ball and we note in the same variable which is the angle of the joint attachment, there was a difference in the achievement of the values of this variable between the front and rear multiplication where the movement of the attachment had a greater bend in the joint of the elbow and this bend negatively affects the performance because it reduces the radius i.e. reduces the length of the striking arm.

As for the variable angle of the angle of the shoulder joint, the tests were post-achieved values we note that the values of the front beating are better by achieving a point of contact with the ball be higher in this group reverse the rear strike where achieved lower angles and this means after the ball and even achieve contact with the ball requires reducing the angle of the joint and this leads to a decrease of contact point with the ball, which negatively affects the performance of the striker in the tennis ball.

Conclusion by watching what the latest training program in delorm system

- The latest training program of the training group in thesystem of delorm tatr r re-meaning in most of the muscle strengths of the skill of sending tennis

- The latest training program of the training group in thesystem of Delorme Touat r in and some of the kinmatic variablesfor theskill of sending tennis

In light of the researchers' findings, they recommended thefollowing:
- The use of theDelorme system in the training of tennis players.
- Use thediorm system with the training uniform used in the training unit to achieve better results

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Appendix No. (2)
Training unit model

Group	Exercise name	Intensity	Iteration	Comfort between totals	Rest between exercises
Delorme system	Front pressure.	50% 75% 100%	10 10 10	2-3d	3-4d
	Seating half squatting	50% 75% 100%	10 10 10	2-3d	3-4d