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The effect of training in the style of Maxex to develop the distinctive powers of speed for table tennis players

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Abstract:

The continuous development has made the numbers recorded and the great achievements that are achieved in the game of ping-pong that soon be recorded until new numbers are achieved and so on, and all this is the result of continuous training and using the latest modern and innovative training methods and methods, and given the adoption of the sport of table tennis on two important factors (muscle strength and the art of performance) The harmony, coordination and cooperation between the different sciences was in developing muscle strength through functional and training foundations, directing this force towards technical performance with correct and economic paths, and using the muscle strength of the quadrant within kinetic pathways through which we work on the optimal investment of this strength by reducing the momentum of resistance Resulting from heaviness and increasing the force output exerted by the lifter during lifting the weight up and reducing the horizontal force component toward the vertical component of the force. The importance of training according to scientific foundations, including the reliance on building a training curriculum in the Maxex style, to develop the strength of the players' distinctive speed and explosive ability.

This is what prompted the research to enter within these variables and work to build a training curriculum in the manner of Maxex comprehensive for all these scientific variables, and to prepare a training curriculum in the manner of Maxex to develop the strength characteristic of the speed and explosive ability of players. Then, to identify the impact of the Maxex training methodology to develop the strength characteristic of the speed and explosive ability of the players. As for the research hypotheses, there are statistically significant differences between the pre and post tests among the members of the research sample for the experimental group and in favor of the post test, and there are statistically significant differences between the pre and post tests for the members of the research sample for the control group and for the post test, as well as there are statistically significant differences Between the post tests for the two research groups and for the benefit of the experimental group. The researcher used the experimental approach designed by the control and experimental groups, and the research sample included the players of Anbar club and their number (16) quadrants were divided equally into two control and experimental

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groups, and then the researcher conducted exploratory experiments on the research sample to find out the negatives that may accompany the main experiment, and then it was started. With field procedures for research, including pre-tests, implementation of the prepared curriculum and conducting post-tests, and after extracting the results, they were statistically processed for the purpose of analyzing and discussing them.

Key words: *Maxex training, strength and speed.*

I. Introduction

The continuous scientific development of the various sciences has brought about many changes in all areas of life, and one of these areas is the sports field in its various sciences and in different sports, and among these sports is the sport of table tennis. The requirements that helped in reaching the higher levels are the use of modern training methods that work to develop functional devices and special physical abilities that are the basis for improving the game, represented by muscle strength and its various types, such as force characterized by speed, explosive ability and others. Training on such important elements helps the lifters to reach global achievements through modern training methods. The application of any training curriculum, whether period (general or special preparation or competitions) must depend on the performance mechanism as well as the energy production systems used, whether this game is based On a specific system or two systems independent of one from the other or even on the mixed system, and the goal of using energy production systems within these activities is the need to reach a state of overcompensation, not to reach a state of exhaustion, and to achieve the requirements of mathematical achievement and functional adjustment of the quarter.

This is what prompted the research to enter within these variables and work to build a training curriculum in the Maxex style that comprehensively includes all these scientific variables.

The importance of training according to scientific foundations, including the reliance on building a training curriculum in the Maxex style, to develop the strength of the players' distinctive speed and explosive ability.

The sport of table tennis has a training characteristic similar to other sports as it depends on the development of special physical abilities represented by the force characterized by speed and explosive ability, and work to develop these variables in order to raise the achievement and achieve records within this event, through the researcher's humble field experience as a player and trainer for the event, he noticed the existence of Some of the problems, the most important of which is the lack of focus on developing the force characterized by speed and the reduction of the focus on aspects of explosive power within the special physical capabilities, and for his sake the researcher decided to enter into this problem by preparing a training curriculum in the style of Maxex to develop the strength characteristic of speed and explosive ability players.

The objectives of the research lie in preparing a training methodology in the Maxex style to develop the strength characteristic of the players' speed and explosive ability, and to identify the extent of the impact of the Maxex training method for developing the strength characteristic of the speed and explosive ability of the players.

As for the research hypotheses, there are statistically significant differences between the pre and post tests among the members of the research sample for the experimental group and in favor of the post test, as well as there are statistically significant differences between the pre and post tests for the members of the research sample for the control group and for the post test, and there are statistically significant differences between the post tests. For the two research groups and for the benefit of the experimental group.

II. Research Methodology

The researcher used the experimental methodology with two equal groups for its convenience with the nature of the research.

The research sample :

The sample was chosen by the deliberate method and by the method of lottery, as their total number reached (20) players. (4) four fourths were entered in the exploratory experiment and (16) quadrants were entered in the main experiment, and they were divided into two control and experimental groups of equal number. Each group consisted of (8) quadrants. The training curriculum prepared by the researchers was implemented on the experimental group and under their supervision only. The control group implemented the curriculum prepared by the trainer on it.

Equivalence of the sample

The researchers conducted parity between the members of the research sample for the two groups (experimental and control) in order to find out the equivalence of the two groups in all variables except for the experimental variable in order to return the differences that may occur to the experimental variable on the experimental group at the end of the period of application of the training curriculum.

Pre-tests

Pre-tests were conducted for the individuals of the research sample on (24/6/2019), and the official numbers achieved by the sample members were recorded and confirmed.

Training curriculum

The research training curriculum was applied, which consisted of (36) training units, at a rate of (4) training units per week for a period of (9) weeks, and for the period from 2/7/2019 to 31/8/2019 within the special preparation period close to Mafasat. Researchers in preparing the training curriculum using the Maxex method to develop the strength distinguished by the speed and explosive ability of the players, as this training method works to integrate two elements of force characterized by speed and explosive capacity in one, taking into account intensity, size and comfort with accurate scientific methods and foundations working to achieve the objectives of the research

Post tests

POST- tests were conducted for the members of the research sample after completing the application of the training curriculum that was implemented on the experimental group, as the researcher took into account the disorientation that is very close to the conditions in which the pre-tests were conducted, as it was conducted on (3/9/2019). The tests were conducted and the researcher was careful Very much on the application of similar conditions in the pre and post- tests.

III. Results, analyzed and discussed :

Table (1) Presentation, analysis and discussion of the results of the pre and post tests for the experimental group of strength tests characterized by speed

Tests	Experimental group		Small value of W	(W) tabular value	Significance
	W+	W-			
Bend behind me, bend the knees down and get up (squat).	0	36	0	3	Sign
Front Standing Push-Up Exercise Hand Hole Medium Chest-wide from the strap	0	36	0	3	Sign

As for the strength tests characterized by speed, Table No. (1) showed us the presence of significant significant differences for the experimental group, as the value of (and -) (36), while the total of ranks reached (and +) (zero) and since the value of (F) The minor is (zero), and by revealing (f) the tabular below the significance level of (0.05) it reached (3), which indicates the presence of significant differences for the experimental group in the front pressure exercise test from standing. To measure the force characteristic of the velocity of the leg muscles, it reached (and +) rank (zero) and reached (W-) rank (36) and since the smallest value for (F) is (zero) and the tabular value of (F) is (3) below the level of significance (0.05) which indicates the significance of the differences between the pre and post tests of the group. This confirms the validity of the first hypothesis of the research hypothesis. Experimental. And through the data that appeared in Table (3), which indicated the significance of the differences in strength tests characterized by speed. The researchers attribute the morale of the differences to the training method

adopted by the researchers, which aims to develop special strength within different exercises, which had a great impact on developing strength characterized by speed. The researcher worked on developing it through the scientific foundations to which the training method was subjected, represented by intensity, size, comfort and repetition. So (Dan Smith 2015) sees this method

Training on various functional movements and different activities of high intensity using time and intensity simultaneously and that the purpose of this diversity is to achieve the best development of the elements of physical fitness. ”This is confirmed (Dived Sadier 2005)“ that table tennis and kinetic training exercises work to develop the forces characterized by speed As well as maintaining the elements of speed and power at the same time, so we have to emphasize the use of training methods that work to develop this characteristic.

Table (2) Presentation, analysis and discussion of the results of the pre and post tests for the Control groupof strength tests characterized by speed

Tests	Experimental group		Small value of W	(W) tabular value	Significance
	W+	W-			
Bend behind me, bend the knees down and get up (squat).	3	33	3	3	Sign
Front Standing Push-Up Exercise Hand Hole Medium Chest-wide from the strap	2	34	2	3	Sign

As for the strength tests distinguished by speed, Table (2) showed us the presence of significant significant differences for the control group, as it reached a value of (and -) (3), while the total of ranks reached (and +) (33) and since the value of (and The minor is (3), and by revealing (and) the tabular below the significance level (0.05), it reached (3), which indicates the presence of significant differences for the post test in a posterior tibial test, bending the knees down and then getting up (squatting). Within the strength tests characterized by speed, as for the test for a front pressure exercise from standing, the opening of the hands is medium with the width of the chest of the strap to measure the force characteristic of speed, it reached (and +) rank (3) and reached (F-) rank (34) since the smallest value of (F) is (2) and the tabular value of (f) is (3) below the level of significance (0.05), which indicates the significance of the differences between the pre and post tests of the control group, and this confirms the validity of the second hypothesis of the research hypothesis. The researchers attribute the significance of the differences in the

pre and post tests of the control group in the strength tests characteristic of speed to the specificity of the game training, and the researcher agrees with him, as he (Michael Boule 2004) showed that most studies have shown that the best and safest way to develop strength distinguished by speed are exercises that are in their nature It depends on the production of capabilities. "(Lori Indedon 2005) believes that" a sport that has a training method that develops strength characterized by speed is working to develop special abilities "while (William & Keijo 2002) stated that" the sport that is currently subject to table tennis is One of the best sports distinguished in generating force characterized by speed and achieving resistance by training, meaning that it works to spread the manifestations of strength and resistance within the sciences of sports training, and this is what recent studies have proven that such exercises surround all games in the development of force characterized by speed.

Table (3) Presenting, analyzing and discussing the results of the dimensional tests for the experimental and control groups of the strength tests characterized by velocity

Tests	Control group&Experimental group		Small value of E	(E) tabular value	Significance
	E1	E2			
Bend behind me, bend the knees down and get up (squat).	10	28	10	18	Sign
Front Standing Push-Up Exercise Hand Hole Medium Chest-wide from the strap	13	25	13		Sign

The results in Table (3) indicate the presence of significant differences between the experimental and control groups and in favor of the experimental group, as the value of (j) is (10), and with the disclosure of (j) the tabular reached (18), which indicates the existence of similar differences. Significant significance of the two experimental and control groups in a posterior tibial test, bending the knees down and standing up (squatting). Within the strength tests characterized by speed, as for the test for a front pressure exercise from standing, the opening of the hands is medium with the width of the chest of the strap, the smallest value for (j) is (13) and the tabular value of (j) is (18), which indicates the significant differences between The two post tests for the experimental and control groups. Through the above-mentioned presentation and analysis of the results of the two post-tests of the experimental and control groups, the researcher fulfilled the third hypothesis of the research hypothesis using the Mann and Tenny test for small samples.

The researchers attribute the significant differences in the dimensional tests of the experimental and control groups, the strength distinguished by speed, to the specificity of weight training that works to develop the two elements of strength and speed together, and this is confirmed by (Ben Reuter 2012). The development of strength distinguished by speed "As for (Gray Cook 2003)," one of the most important exercises that works to develop the strength distinguished by speed is the lifting of the two in the sport of table tennis, depending on the correct application of the technique of this levitation, while (George.et-al 1998) believes that "It is usually recommended to use table tennis exercises to develop the two elements of strength distinguished by speed in training programs because ping-pong training has a very high capacity in developing the element of strength and speed, and these exercises are very necessary for all sports as well as improving the production of physical and functional abilities." With (George.et-al 1998) that table tennis training has the ability to develop the element of strength characterized by speed and that these exercises are very necessary for all sports as well as It has the ability to improve the production of physical and functional ability.

IV. Conclusions and recommendations

In light of the results of the research, the researcher concluded that the Maxex method, which contains the aspect of diversity with intensity, worked on developing the force characterized by speed and explosive power. It has an effect on the development of explosive power. The exercises that underwent the anaerobic system had a direct effect on developing the force characterized by velocity and explosive power.

The researcher recommended emphasizing the use of the Maxex method in the sport of table tennis, considering it the most recent modern training methods. It is necessary to work within the Maxex method with the nature of diversity in activities within different stresses. Emphasis on the trainers in charge of the training process of the need to develop the physical and functional levels in the training method used, generalize such a study on All table tennis teams should inform workers in this field about such a study for the purpose of developing training capabilities, the need to conduct studies similar to such a current study within Maxex.

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