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مجلة علمية محكمة تصدرها كلية التربية البدنية وعلوم الرياضة



## *The Effect of Reciprocal Exercises on the Development of Some Physical Abilities and the Achievement of the Effectiveness of the Long Jump*

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### **ABSTRACT**

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**Keywords:**

**Reciprocal**

**Long Jump**

**Achievement**

The reciprocal method is one of these methods that gives a great role to the learner in the learning process and leads to the creation of new relationships and behaviors in the student's and the teacher's home, and develops the transfer of a large number of decisions to the student and creates social relations of special awareness among students, so the importance of research lies in developing the physical abilities of students to learn better for optimal performance by developing special exercises using the reciprocal method to learn the effectiveness of the long jump for college students and economically in terms of The study aimed to prepare exercises for the reciprocal method and to know their effect on the development of some physical abilities and the achievement of the jump effectiveness, as the researcher used the experimental method on the students of the first stage at the Faculty of Physical Education and Sport Sciences – University of Al-Qadisiyah for the academic year (2024-2025). The number of students amounted to (60) students representing the two divisions (E-D) and by random method, (40) students representing the study sample were selected and divided into two experimental and control groups with (20) students for each group, as the exercises included (8) educational units as well as two introductory units and two educational units per week and after the end of the curriculum and processing the results, the researcher concluded. The exercises of the reciprocal method have a positive effect on the development of some physical abilities (speed and strength) in the members of the research sample (experimental group), which led to the development of the level of achievement

## **1- Introducing the research**

### **1-1 Introduction and Importance of the Research**

In light of the rapid progress in all fields, the role of the teacher must change to keep pace with the development that takes place, because it constitutes one of the important elements in the educational process, so learning it has become an urgent necessity imposed by successive scientific changes and transformations, as it requires the use of certain methods of teaching in modern trends in teaching methods according to the real needs for the development of the student's performance and the improvement of his youthful, motor and physical level. For various sporting events. The reciprocal method is one of these methods, as it gives a great role to the learner in the learning process, and leads to the creation of new relationships and behaviors in the student-teacher home, develops the transmission of a large number of decisions to the student, and creates social relations of special awareness among students. One of the most prominent activities that are studied in the college curriculum is the arena and field events, including the long jump event, which requires special abilities for the purpose of performing the event perfectly. Special ability can only be developed by the presence of two basic elements, strength and speed, as they are considered as one of the basic elements on which the development of the special ability of the learner depends to achieve optimal performance and best achievement. Through the above, the importance of research is manifested in developing the physical abilities of students to learn better for optimal performance through the development of special exercises using the reciprocal method to learn the effectiveness of the long jump for college students economically in terms of time, effort and creativity and to know its impact on improving the required education and improving achievement

### **1-2 Research Problem :**

One of the teaching vocabulary for college students is the effectiveness of the arena and field, including the long jump event within the curriculum of the first stage. Through the researcher's work in the field of arena and field games, he noticed a fluctuation in the level of physical abilities and the level of performance of the long jump event among the students, and that they face difficulty in learning the effectiveness compared to other activities, and the researcher attributes this low and difficulty to the method followed by the teacher, the exercises he uses in teaching the event, and the lack of use of special exercises. To develop that effectiveness. Therefore, the possibility of using another method or method is the best solution to move away from traditional methods, so the researcher decided to find a solution to this problem by studying the effect of special exercises to develop some physical abilities in learners in the reciprocal method.

### **1-3 Research Objectives :**

1- Preparing exercises in the reciprocal method to improve some physical abilities and accomplish the long jump competition among the students of the first stage.

2- Identifying the effect of reciprocal exercises on the development of some physical abilities and the achievement of the long jump effectiveness.

### **1-4 Research Hypotheses:**

- 1- Exercises for the reciprocal style have a positive effect on the development of some physical abilities and the achievement of the effectiveness of the long jump.
- 2- There are significant differences between the effect of the exercises in the reciprocal method and the method used by the teacher in learning the effectiveness.

### **1-5 Research Areas:**

#### **1.5.1 The Human Field:**

Students of the Faculty of Physical Education and Sport Sciences /First Stage/ University of Al-Qadisiyah for the Academic Year 2024-2025

**1.5.2 Temporal Domain:** - Period from 25/2/2025 to 30/4/2025

**1.5.3 Spatial Field:** The Stadium of the Faculty of Physical Education and Sport Sciences - University of Al-Qadisiyah - for Arena and Field Games .

### **3- Research methodology and field procedures:**

#### **3-1 Research Methodology :**

The researcher used the experimental method in the method of the two equal groups to fit the study problem.

#### **3-2 The Society and its Research Subject :**

The research population was identified from the first stage students at the Faculty of Physical Education and Sport Sciences – University of Al-Qadisiyyah for the academic year (2024-2025). The number of (60) students representing the two divisions (E and D) "The goals set by the researcher for his research and the procedures he uses will determine the nature of the sample he chooses".<sup>1</sup> By random method, (40) students representing the study sample were selected and distributed into two experimental and control groups with (20) students for each group, after the researcher excluded a number of them due to non-compliance, failure and injuries as they constituted (66%) of the society.

#### **3-21. Homogeneity of the sample:**

The researcher found the homogeneity of the sample members in the variables (height, weight, age) as shown in Table ( 1 )

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(1) Duqan Obeidat et al.: Scientific Research: Its Concept and Methods – Its Tools , Amman, Dar Al-Majd for Publishing and Distribution, 1996 , p. 215.

Table ( 1 )

Shows the homogeneity of the members of the research sample in the research variables

Significance of a Statistic	Calculated f value	Experimental Group		Control Group		Variables
		on	Going to-	on	Going to-	
Insignificant	1.723	3.938	169.45	5.17	168.95	Length (cm)
Insignificant	1.324	8.302	64.15	7.214	61.60	Weight (kg)
Insignificant	1.423	1.578	20.60	1.323	19.50	Age ( Year )

### 3.3 The parity of the two research groups:

The researcher performed the parity on the two research groups in the variables (achievement, maximum power, force characterized by speed, maximum speed) using the ( t ) test, and as shown, the evaluation of ( t ) and for all variables less than the serious value of the logic at the degree of freedom (38) and the significance level of (0.05) which is (2.021), which indicates the parity of the sample as shown in Table ( 2 ).

Table ( 2 )

Shows the equivalence of the two groups in the research variables

Significance of a Statistic	Calculated T Value	Experimental Group		Control Group		Variables
		on	Going to-	on	Going to-	
Insignificant	1.020	0.136	2.23	0.160	2.18	Maximum Forces
Insignificant	0.461	4.570	30.75	5.822	30.10	The Strength of Speed for the Right Man
Insignificant	0.155	4.376	28.95	4.372	28.75	Left-footed power
Insignificant	0.090	0.272	4.21	0.348	4.20	Top Speed
Insignificant	0.565	0.522	4.22	0.320	4.13	Achievement (M)

The tabular value of the test (t) at a degree of freedom (38) below the level of the E pallum (0.05) is (2.021).

### 3-4 Methods, Tools and Devices Used in the Research:

#### 3.4.1 Research Methods:

The researcher used the following research methods:

- Sources and references, Arabic and foreign.
- Note.
- Information Network (Internet).
- Test and measure.
- Personal interviews.

#### 3.4.2 Devices and tools used in the research:

- Measuring tape of a leather type with a length of (50 m) (1).
- Video Disc (Sony – MP120) with (3 Hours) (2)
- Electronic Medical Scale (1) for mass measurement.
- Pentium 4 Electronic Computer (1).
- Indicators (10). Obstacles number (10).
- Whistle number (2).
- DVD projector.
- Japanese-made stopwatch (2).
- Long jump event stadium.

### 3-5 Field Research Procedures:

#### 3.5.1 Description of the Tests:

##### First: Test of running (30) m from the beginning of the fly<sup>2</sup>:

**Purpose of the test:** Measure the maximum speed.

##### Necessary Tools:

- Time clock, electronic.
- Two lines draw the distance between them (30) m and another line (10) m away from one of the two lines for the beginning of Ato run from that line, provided that the time is recorded when the player reaches the starting line of measurement at the moment of skipping the end.
- The goal of the first (10) meter run is to accelerate the total running time (acceleration).

##### Performance Description:

The player is standing with his front foot behind the line and the moment he hears the start signal, he runs the distance as fast as possible to reach the end. When he crosses the second starting line, which is 10 m away from the first line of the start, the timing starts with a signal from the line monitor.

##### Conditions:

- The time is recorded for the nearest part of the second .
- The time of the last (30) meters is calculated out of (40) meters.

##### Second: The test of the wide jump from stability.<sup>3</sup>

**The objective of the test is** to measure the explosive strength of the muscles of two legs.

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(1) Kamal Abdel Hamid and Mohamed Sobhy Hassanein: Physical Fitness and its Components – Theoretical Foundations – Physical Preparation – Measurement Methods: (Cairo, Dar Al-Fikr Al-Arabi, 1997), p. 307.

Kamal Abdel Hamid, Mohamed Sobhy Hassanein, Foundations of Sport Training , Cairo, Dar Al-Fikr Al-Arabi, 1997 <sup>3</sup> , p. 257.

**Necessary Tools:**

- Jumping field with a width of (1.5) and a length of (3.5) meters
- Instrument formeasuring.
- Painting ARatqa.

**Performance Description:**

The player is standing with the feet slightly apart, as his feet touch the elevation plate from the outside, the player begins to move the arms forward and down with the knees bent and the torso leaning forward, and from this shape, the arms are swinging forward strongly with the legs stretched along a torso and pushing the ground with the feet with force in an attempt to jump forward to the farthest distance. Possible as shown in Figure (11)

**Conditions:**

- Measuring the distance of the jump from the last trace left by player A to the nearest ascent
- A is the elevation of the player by the feet together and landing on them together.

Note: The starting line is (5) cm wide and is included in the measurement.

**Third: The maximum distance is (10) seconds on one leg (for both legs).<sup>4</sup>**

- **Purpose of the test:** To measure the strength of the force characterized by speed for each individual man.
- **Exam Procedure:**
  - Draw lines on the ground and draw on it, marking the measurement in meters, noting that it does not deviate from the drawn line and does not touch any part of the object on the ground.
  - Partridge exerts maximum possible ability to record the greatest distance for each individual man.

**3-6 Exploratory Experiment:**

The exploratory experiment is a miniature experiment of the basic experiment and it must meet the conditions and conditions in which the basic experiment is possible in order to be adopted ."<sup>(5)</sup>

The exploratory experiment was conducted on 26/2/2025 on a sample of (8) students from the research community, and the main objective of the exploratory experiment was to identify the difficulties that may face the researcher, and in light of the above, the following were identified:

- 1- Knowing the readiness of the research sample to perform the tests.
- 2- Know the time it takes to take the tests.
- 3- Knowing the suitability of the tests for the research sample.
- 4- Assistant Team.

**3-7 Pre-Test:**

The researcher conducted the pre-physical tests on 28/2/2025 at ten o'clock in the morning at the stadium of the Faculty of Physical Education and Sport Sciences – University of Al-Qadisiyah, where the tests included the following:

- Top Speed Test
- Maximum Strength Test
- Speed Characteristic Force Test

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Kamal Jamal Al-Rabadhi: Sport Training for the Twenty-First Century , 2nd Edition, University of Jordan, 2004 , p. 154. <sup>4</sup>

Marwan Abdel Majeed Ibrahim: Methods and Methods of Scientific Research in Physical and Sport Education, <sup>5</sup>  
Amman, Dar Al-Alamiyah for Publishing and Distribution, 2002.

- Long Jump Achievement
- Rest between one test and another (5) minutes

### 3-8 Proposed Method:- \*

The educational curriculum included eight educational units on 1/3/2025, as well as two introductory units and two educational units per week \*, as the researcher prepared the educational curriculum for the long jump event, which includes various exercises and in a reciprocal manner that helps develop physical abilities, which are specialized in learning effectiveness and achieving optimal achievement among students, relying on his experience and field training experience and with the help of the opinions of experts specialized in the field of science.

The duration of the implementation of the educational curriculum took four weeks and two units per week. The time of the Teaching Unit (50-60) was limited to the main section only.

### 3-9- Post-tests:

After the completion of the educational units of the educational curriculum, the post-tests were conducted on the study sample on 16/3/2025 at eleven o'clock in the morning at the college stadium, where a researcher took into account the same conditions as the pre-test, as three legal attempts were given to each of the sample members with regard to (achievement)

### 3-10 Statistical Methods :

The researcher used the statistical means of the results in the statistical package ( SPSS ).

## 4- Presenting, analyzing, and discussing the results:

### 4-1 Presenting, analyzing and discussing the results of the pre and post-test for the research groups and the achievement variable:

Table ( 3 )

Shows the arithmetic media, standard deviations, and the value of (t) calculated for the pre- and post-test of the achievement variable.

Significance	Calculated value ( t )	Go away		Before me		Collection
		on	Going to-	on	Going to-	
Moral	3.340	0.438	4.70	0.522	4.40	Experimental (M)
Moral	3.038	0.447	4.45	0.320	4.35	Officer (M)

**The tabular value of (t) is (1.729) at the degree of freedom (19) and below the significance level ( 0.05 )**

It is evident in Table (3) that there are significant differences between the two tests, the pre-test and the post-test and in favor of the post-test, it is noted from the above that both the experimental and control groups have had statistically significant differences between the results of the pre- and post-tests and in favor of the post-test, and the researcher attributes the reason for obtaining this result to the fact that all the exercises that were used on the members of the research sample group (experimental, control) on the study variables It served the motor goal of the jump performance, which is to obtain the farthest horizontal jump distance, which means that the development that accompanied all the physical elements gave an indication of the development of the efficiency and coordination of work between the joints of the body and the working muscles, and then the production of a greater speed, which gave this to an advantage in the results of the total distance (for achievement) for the effectiveness of the long jump in telemetry and for both groups (experimental and control).

\* Accessories (2 )

Muhammad Jassim Al-Yasiri, Marwan Abdel Majeed, Statistical Methods in the Fields of Educational Research,<sup>6</sup> 1st Edition, Al-Warraaq Publishing Foundation. Al-Tawziyyah, Amman: 2001, p. 137.

#### 4-2 Presentation, analysis and discussion of the results of the post-test of the research groups and the achievement variable

Table (4)

It shows the arithmetic media, standard deviations, and the value of ( t ) calculated for the post-test and for the two groups for the research variable of achievement

Significance	Calculated value ( t )	Officer		Experimental		Variable
		on	Going to	on	Going to	
Moral	2.438	0.447	4.45	0.438	4.70	Achievement (M)
<b>The tabular value ( t ) is (2.021) at the degree of freedom (38) and below the level of significance ( 0.05 )</b>						

Table (4) shows that there are significant differences in the post-test of the two groups and in favor of the experimental group in the achievement variable, and the researcher attributes the reason for obtaining this result is due to the development of physical abilities as a result of the special exercises accompanying the technical performance of the long jump effectiveness, which greatly affect the achievement, related to the reciprocal method and based on scientific foundations, as the educational curriculum prepared before The researcher and his various exercises and the resulting positive and effective role in focusing on the work of the muscle groups of the long jump and their correct path and in a way that believes in the economy of effort and ensuring the flow of movement have affected the development of the final achievement, and this is what gave the members of the experimental group the preference in the digital achievement of the effectiveness of the long jump. "Skill is a function of performance effectiveness, as the learner develops some motor responses in a new motor organization, and each motor skill requires the organization and arrangement of the action of certain muscle groups in a certain direction. <sup>(7)</sup>

#### 4-3 Presentation, analysis and discussion of the results of the pre and post test of the research groups in the maximum strength test:

Table ( 5 )

Shows the arithmetic medians, standard deviations and the value of (t) calculated for the pre- and post-test in the long jump of stability.

Significance	Calculated t-value	Go away		Before me		Collection
		on	Going to	on	Going to	
morale	2.853	0.16	2.50	0.136	2.20	Experimental (M)
morale	2.645	0.13	2.32	0.160	2.22	Officer (M)

The tabular value of ( t ) is (1.729) at the degree of freedom (19) and below the significance level of (0.05)

Qasim Hassan Hussein: Sport Psychology, its Principles and Applications in the Field of Training, Baghdad: <sup>7</sup> Education Press. Al-Aali, 1995, p. 92

Table (5) shows that there are statistically significant differences between the results of the pre- and post-tests for both groups and in favor of the post-test. The researcher attributes this development in the long jump test of stability (the explosive ability of the legs), as a result of the use of various exercises (jumping sprints, long jumps from standing, squat jumping, jumping over obstacles, and side jump over obstacles) and traditional exercises in the educational curriculum by the teacher. Varied jumping exercises contribute to the development of speed and muscular strength, by integrating the elements of speed and muscular strength into what is called explosive ability, and ability is a necessary and important element in the performance of most sports skills, especially in athletics events<sup>(1)</sup>.

#### 4.6 Presentation, analysis and discussion of the results of the post-test of the two groups at maximum strength

**Table (6)**

**Shows the arithmetic media, standard deviations, and the (t) value calculated for the post-test and the two research groups for the long jump variable of stability**

Significance	Calculated t-value	Officer		Experimental		Variable
		on	Going to-	on	Going to-	
Moral	3.095	0.13	2.32	0.16	2.50	Long Jump of Stability (m)

The tabular t-value is (2.021) at the degree of freedom (38) and below the significance level (0.05)

Table (6) shows that there is a significant difference between the two groups (control and experimental) and in favor of the experimental group, i.e. there is a preference for the educational program using the reciprocal method in developing the level of achievement in the long jump test of stability (the explosive ability of the legs). The researcher attributes the reason for obtaining this result to the fact that the various jumping and jumping exercises, which were performed with high accuracy and organization in reciprocal manner, positively affected the work of the muscles of the legs. Dynamic movement, which is the ability of the player to combine strength and speed, as this ability tends to speed and strength together but in varying proportions, depending on the size of the external resistance as well as the external composition of the movement.

#### 4-7 Presenting, analyzing and discussing the results of the pre- and post-test for the research groups and the force variable characterized by speed for the right leg:

**Table (7)**

**Shows the arithmetic media, standard deviations and the value of ( t ) calculated for the pre- and post-test of the partridge variable for the maximum distance within (10) seconds for the right leg**

Significance		Go away	Before me	
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1- Muhammad Jassim Al-Yasiri and Marwan Abdul Majeed Ibrahim: *Modern Trends in Sports Training*, 1st Edition, Amman, Al-Warraq Publishing and Distribution Foundation, 2004, p. 111.

<sup>(2)</sup> Raysan Khraibat Majeed and Ali Turki Musleh: *Theories of Strength Training*, Baghdad, B.M., 2002, pp. 59-60.

	Calculated t-value	on	Going to	on	Going to	Collection
morale	4.271	4.73	36.50	4.570	28.90	Experimental (M)
morale	3.865	3.495	33.80	5.822	30.00	Officer (M)
Its tabular value (t) is (1.729) at a degree of freedom (19) and below the significance level of (0.05)						

Table (7) shows that both the experimental and control groups had statistically significant differences between the results of the pre- and post-tests and the results of special and traditional exercises, which had a clear effect on the strength characterized by speed.

#### 4-8 Presentation of the results , analysis and discussion of the post-test for the two study groups and for the force variable characterized by speed for the right leg:

Table (8)

Shows the mean of the calculation, standard deviation , and the value of ( t ) calculated for the post-test and for the two research groups for the partridge variable for the maximum distance during (10) seconds for the right leg.

Significance	Calculated t-value	The officer		Experimental		Variable
		on	Going to	on	Going to	
Moral	4.359	3.495	33.80	4.73	36.50	Partridge to the maximum distance dur(10)s (right leg)
The tabular t) value is (2.021) at a degree of freedom (38) and below the significance level of (0.05)						

As for Table (8), the researcher attributes the reason for obtaining this result to the fact that the exercises used in the reciprocal method to develop (the strength characterized by speed for the right leg) were clearly effective in improving the level of achievement in the partridge test for the maximum distance within (10) seconds, as (Kamal Jamil Al-Rabadhi) pointed out the possibility of developing the strength characterized by speed by giving a very similar exercise For the required performance in the competitions,<sup>8</sup>

#### 4-9 Presentation, analysis and discussion of the results of the pre and post test of the research groups and the force variable characterized by the speed of the left leg:

Table (9)

Shows the arithmetic media, standard deviations, and the value of (t) calculated for the pre- and post-test of the partridge variable for the maximum distance during 10 s for the left leg.

Significance	Calculated t-value	Go away		Before me		Collection
		on	Going to-	on	Going to-	
Moral	3.006	4.731	33.61	4.376	28.95	Experimental (M)
Moral	3.006	4.731	33.61	4.376	28.95	Officer (M)

Kamal Jamil Al-Rabadhi : *Sport Training for the Twenty-First Century* , 2nd Edition, Amman, University of Jordan, <sup>8</sup> 2004, p. 42

The tabular value of (t) is (1.729) at the degree of freedom (19) and below the significance level of (0.05)

Table (9) shows the effect of the exercises accompanying learning in the development of the achievement level of the partridge test of the maximum distance within (10) seconds for the left leg (the force characterized by speed of the muscles of the legs) and for both the research groups (experimental and control), which is a natural thing to develop due to the effect of exercises of this type, especially with beginners.

#### 4-10 Presentation of the results of the post-test of the two research groups and the force variable characterized by speed for the right and left legs, analyzed and discussed:

**Table (10)**

It shows the arithmetic mean, standard deviation, and the value of (t) calculated for the post-test and the two study groups for the partridge variable for the maximum distance during (10) seconds for the left leg.

Significance	Calculated t-value	The officer		Experimental		Variable
		on	Going to	on	Going to	
Moral	2.855	4.699	30.00	4.731	33.61	Partridge for the maximum halal distance(10)s left leg

The tabular value of t is (2.021) at the degree of freedom (38) and below the significance level of (0.05)

Table (10) shows that there are significant differences between the two groups (control and experimental), i.e. there is a preference for the educational approach using the reciprocal method in developing the level of achievement in the partridge test for the maximum distance of the right and left legs (the distinctive strength of the two legs) and in favor of the experimental group. The appearance of significant differences between the two groups for this variable indicates that the ability development exercises used for the two men were effective in obtaining this result, as the strength training used by the sample members The (experimental) group worked to increase the amount of muscular capacity. Increasing the strength in the muscles of the legs through the use of strength exercises leads to an increase in the speed of movement of the legs, so increasing muscle strength is an important factor for sports activities based on muscular ability when they are organized by the coordinated reciprocal method of work and rest between the observer and the correction members of the research sample (experimental group)<sup>(1)</sup>.

#### 4-11 Presentation , analysis and discussion of the results of the pre- and post-test for the research groups and the maximum speed variable:

**Table ( 11 )**

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- 1- Mahmoud Mohamed Labib: A Comparative Study of the Effect of Using Two Different Methods for the Development of Muscular Ability (Plyometric - Ballistic) on the Digital Achievement Level of Triple Jump Players, Fourth Regional Conference of the International Council for Health, Physical Education, Recreation, Sport and Motor Expression for the Middle East Region, Faculty of Physical Education, Abu Qir, Alexandria University, October 15, 2008.

Shows the mean of the arithmetic, the standard deviation, and the value of (t) calculated for the pre- and post-test of the sprint variable (30) m from the beginning of the aircraft.

Significance	Calculated t-value	Go away		Before me		Collection
		on	Going to	on	Going to	
Morale	6.003	0.511	3.59	0.272	4.21	Experimental (s)
morale	4.289	0.221	3.92	0.348	4.20	Officer (S)

The tabular value of (t) is (1.729) at the degree of freedom (19) and below the significance level of (0.05)

Table (11) shows that there is a significant difference between the pre-test and the post-test and for its benefit the post-test for both the experimental and control groups, from the above, the researcher believes that the implementation of the curriculum planned for the control group and the educational curriculum prepared by the researcher for the experimental group was effective in influencing the achievement of a good maximum speed and in a way commensurate with the achievement of the horizontal distance required from them, so statistically significant differences appeared between the pre- and post-tests, as the researcher indicates that the speed The maximum when starting to teach the long jump event is not suitable for the learners, and it is one of the factors that the teacher emphasizes when teaching and training this event.

#### 4-12 Presentation, analysis and discussion of the results of the post-test for the two research groups Maximum speed:

Table (12)

The mean of the arithmetic, the standard deviation , and the value of ( t ) calculated for the post-tests and for the two groups in the enemy (30) from the beginning of the plane

Significance	Calculated t-value	The officer		Experimental		Variable
		on	Going to	on	Going to	
Moral	3.014	0.221	3.92	0.511	3.59	Enemy(30) m of flying mode (s)

Its tabular value (t) is (2.021) at the degree of freedom (38) and below the significance level of (0.05)

The researcher attributes the reason for obtaining this result to the effectiveness of the application of the educational curriculum and the reciprocal method, which, as I mentioned earlier, led to the development of muscular ability during the maximum speed stage represented in the approach stage of the effectiveness of the long jump, as the exercises that were used in special running and jumping conditions enhanced the learner's sense of executing the steps of running with an appropriate length and good repetition, which was reflected in the development of his running technique. This<sup>9</sup> is what the researcher emphasized in organizing and diversifying the methods of running and jumping by exchanging learners when developing exercises for learning the effectiveness of the long jump among the members of the research sample (experimental group).

Muwaffaq Saeed Al-Dabbagh: The Effect of Using a Proposed Training Program to Develop the Maximum Strength of the Upper and Lower Limb Muscles of the Participants in the Physical Fitness Course, Al-Rafidain Journal for Sport Sciences, Volume Eight, Issue Twenty-Eight, 2002

## 5. Conclusions and Recommendations:

### 5.1 Conclusions:

**After the results of the study appeared, the researcher concluded :**

1. There are significant differences between the pre- and post-tests in all study variables for both groups (control and experimental) and in favor of the post-tests.
2. There are significant differences in the post-test between the two groups (experimental and control) in favor of the experimental group.
3. Exercises related to the reciprocal method have a positive effect on the development of some physical abilities (speed and strength) in the members of the research sample (experimental group).
4. The reciprocal (jumping) exercises have a positive effect on the numerical achievement of the long jump effectiveness in the experimental group.

### 5-2 Recommendations:

**Through the conclusions reached by the researcher :**

1. Use special exercises to develop physical elements (strength, speed) when teaching the effectiveness of the long jump, especially with students.
2. The need to pay great attention to the physical aspect and the motor aspect in teaching the effectiveness of the long jump in the faculties of physical education.
3. Designing educational curricula according to multiple indicators and methods, including the interactive method, which gave a competitive and social atmosphere, which helped them to benefit greatly from the prepared exercises, as this reflected positively on the level of performance and achievement of students.
4. Conducting similar research and studies on age groups and other sporting events.

### References

- Duqan Abdat et al.: Scientific Research, Its Concept and Methods, Tools , Amman, Dar Al-Majd Publishing and Distribution, 1996
- Raysan Khraibat Majeed and Ali Turki Musleh: Theories of Force Training , Baghdad, B.M., 2002, Al-Aali, 1995
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### Sample Proposed Modules

#### First Unit:

Unit Time: 50-60 minutes

The time of one repetition	Comfort between groups	Totals	Rest between repetitions	Repetition	Physical Exercise	Time in minutes	Unit Departments
						60 KD	Main Section
20 S	3D	2	45 seconds	3	- Jumping in place by raising the knees high towards the chest (3×20 seconds)	11D	
25 S	3D	2	30 S	6	Side-to-side jump over an obstacle with a height of (30 cm), (6×25 seconds)	15 KD	
40 S	2 D	2	15 S	8	From the position of lying on the back, raise and lower the legs together (8×40 seconds)	16 BD	
60 S	3D	3	30 S	3	Jump with both feet on (10) hurdles with gradient height (20-70 cm), repetition (3×60 seconds)	18 BD	

#### Unit: Second:

The time of one repetition	Comfort between groups	Totals	Rest between repetitions	Repetition	Physical Exercise	Time in minutes	Unit Departments
						60 KD	Main Section
25 S	4D	3	30 S	8	Jump Run (8 × 25 seconds)	26 BD	
35 S	3D	3	25 S	6	Jump over several obstacles (10 obstacles) (6×35s)	22 KD	
20 S	3D	3	10 S	4	From the prone position lift and lower the torso (20 s× 4)	12 BD	

#### Third Module:

The time of one repetition	Comfort between groups	Totals	Rest between repetitions	Repetition	Physical Exercise	Time in minutes	Unit Departments
						60 KD	Main Section
40 S	4 D	3	30 S	6	Partridge on the right leg and then partridge on the left leg (6×40 seconds)	30 BD	

25 S	3D	3	20 S	6	Jumping from over (10 obstacles) with different heights (20 cm, ), (6 × 25 seconds) سم 80	20 BD	
24 seconds	3D	2	15 S	5	Jump Run (5 × 24 seconds)	10 BD	

**Fourth Unit :**

The time of one repetition	Comfort between groups	Totals	Rest between repetitions	Repetition	Physical Exercise	Time in minutes	Unit Departments
						60 KD	Main Section
40 S	3D	2	30 S	3	Jumping over several obstacles with a gradient height (30 cm, 80 cm)	10 BD	
5 seconds	2 D	4	30 S	6	A long jump of stability	20 BD	
20 S	3D	3	30 S	6	Partridge by jumping on the right leg and then on the left leg (6×20 seconds)	20 BD	
25 S	3D	2	15 S	5	Jump Run (5 × 25 seconds)	10 BD	