

## The influence of extra exercises on female pupils' agility and learning the effectiveness of the triple jump

Massar Hamza Ali<sup>1,\*</sup>, Prof. Dr. Alyaa Hussein Daham<sup>1</sup>

<sup>1</sup> Faculty of physical Education and sports science, University of Babylon, Babylon, Iraq.

\* Corresponding author, Email: [masar.ali.hphy62@student.uobabylon.edu.iq](mailto:masar.ali.hphy62@student.uobabylon.edu.iq), [phy.alyyaa.h@uobabylon.edu.iq](mailto:phy.alyyaa.h@uobabylon.edu.iq)

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### Abstract

The triple jump is a leaping event in the sports program that is popular at the local, Arab, and international levels. It is one of the activities that necessitate a high level of skill, as well as the ability to link some physical abilities, such as agility, with other physical traits. The research challenge was summarized in designing specific workouts for students that contribute to building agility and understanding the technical stages of the triple jump, because effectiveness demands physical prerequisites and abilities, the most significant of which is agility. The research community included 32 students from Al-Qasim Green University's College of Physical Education and Sports Sciences, and 18 students were chosen as a research sample after rejecting students who practiced for effectiveness and who were not devoted to permanence and failure. After executing tribal tests and statistical transactions, the sample proportion for study was 53 percent of the overall community. The researchers concluded that the workouts contribute to the development of agility and learning the triple jump for the female students in the research sample based on the pre- and post-test and data tabulation. For the second step, the researchers proposed that these exercises be implemented in educational units and during athletics lessons.

**Keywords:** Triple jump, skill, workouts.

### **1.1 Research introduction and significance**

The triple jump is a leaping event in the sports program that is popular at the local, Arab, and international levels. It is one of the activities that require high physical and skill requirements, as well as how to link some physical attributes and abilities such as agility with other physical attributes, and as it is known that Agility plays a major and effective role in raising the level of physical competence of jumpers in order for them to have the ability to harmonize, streamline, and change parts of the body in accordance with the performance requirements for effectiveness, The student must have various special abilities, which are among the basic and very necessary abilities and interfere in the success of the technical performance of the effectiveness of the triple jump, and this is what researchers and specialists agree on that a good learner is the one who is able to use his own abilities better so that he can perform technical performance and proficiency and achieve the ideal performance. In designing innovative workouts that may aid in the development of agility and learning the effectiveness of the triple jump better than the usual way.

### **1.2 research issues**

The Triple Leap event is one of the courses available to second-year students at the faculties of physical education and sports sciences. This event's technical performance necessitates some particular abilities in a variety of areas, including physical and kinesthetic, which is one of the most significant abilities in learning the technical phases of Triple Leap effectiveness. There are several particular powers offered to the learners that make them more and better stable. As a result, they are able to learn and master this activity, as well as gather information about it. I discovered that it is vital to employ activities that will build the abilities that affect the student's performance as a result of the researchers' follow-up to the educational units of this event. Agility, according to the researcher, is one of the most important of these abilities because it is a combination of speed, compatibility, and lightness, and it represents the flow of movement and is a clear indicator of the ideal performance of the students in the lesson as well as the nature of the learners and the stage of learning in which they are. This inspired the two researchers to create special activities for pupils to assist them build agility and learn the usefulness of the triple jump.

### **1.3 Research Objectives**

1- Developing customized activities to help female students gain agility and learn the effectiveness of the triple jump.

2- Recognizing the impact of planned exercises on agility development and learning the effectiveness of the triple jump for female pupils.

1.4 research hypothesis:

Exercises for assistance devices have a substantial impact on female pupils' agility and learning the effectiveness of the triple jump.

### **1.5 Research Topics**

1.5.1 The human field: second-year students at Al-Qasim Green University's College of Physical Education and Sports Sciences for the academic year 2021-2022.

1.5.2 Time span: from 10/12/2021 until 10/2/2022

1.4.3 Spatial domain: Al-Qasim Green University's Faculty of Physical Education and Sports Sciences stadium.

## **2. Field techniques and research methodology**

### **2.1 Study Methodology**

Due to the nature of the research problem, the two researchers utilized the experimental approach with two equal groups (control and experimental) and a pre- and post-test.

## **2.2 Research community and sample:**

The two researchers chose the research community from the second stage students at Al-Qasim Green University's College of Physical Education and Sports Sciences because the triple jump is within the basic domain of the second stage, which numbered (32) students for the academic year 2021-2022. Due to the lack of commitment of some of the female students in the educational units, repetitions, and practices for effectiveness, the study sample was reduced to (18) students, representing 56.25 percent of the initial research community. Following that, they were placed into two groups, experimental and control, based on their individual and pair sequence, with (9) students in each group.

## **2.3 The following methods, tools, and equipment were employed in the study**

- Interview - Questionnaire - Plastic barriers of varying heights - Straps - Timepiece  
- 1 camera - 1 roll of sticky tape

## **2.4 Procedures for conducting field research**

### **2.4.1 Agility Test**

Shuttle running test (6 x 9) meters is the name of the test.

The test's goal is to assess agility.

A legal volleyball court without a net, a stopwatch, and a whistle are required.

Performance description: When the signal is given, the student sprints to the opposing line and crosses it with both feet, then turns to go back and cross the starting line in the same manner, and then repeats this action, i.e. the student goes a distance of (54) meters back and forth. After crossing the finish line, the student cut it at a distance of (6 x 9) meters.

### **2.4.1 Tests for performance evaluation**

The two researchers photographed the technical performance of the research sample in the pre and post tests for the purpose of presenting it to experts and specialists via computer after transferring the video imaging onto special disks (CDs), as the best effort was made for each student, whether from the control group or the experimental group, for the purpose of displaying it. The evaluation of technical performance is on the special form designed by the researcher for all the technical stages of the triple jump effectiveness as in Appendix (1), which was developed after taking the opinion of the experts and then determining the grade of each stage so that the total score Out of (10) for all technical stages, and after collecting data from the experts, the two researchers carried out statis.

### **3.4.3 The exploring experience**

On Sunday, October 31, 2021, the two researchers conducted an exploratory experiment on (4) students chosen at random from the same sample in order to identify:

Determining the sample members' ability to apply the sample

The competence and efficiency of the assistance work team to handle and coordinate the affairs of applying tests in the field.

The number and variety of tests that can be completed on a single test day.

### **2.5.1 Pre-tests**

On Sunday, 7/11/2021, the two researchers performed tribal tests on the experimental and control samples. All tests were conducted at 10 a.m. on the outdoor playground at Al-Qasim Green University's College of Physical Education and Sports Sciences.

### **2.5.2 Special exercises have been designed for the research sample**

To fulfill the study's aims, the two researchers devised customized exercises for the effectiveness of the triple jump based on modern learning tactics and methods, as well as consulting a panel of specialists in the fields of kinesthetic learning and athletics.

The exercises were carried out over a four-week period, with two training units per week.

- The instructional units (8) were executed on Mondays and Wednesdays at 10 a.m. and till 11:30 a.m., according to the lecture times for the athletics lesson.

The fitness curriculum began on November 8, 2021, and will end on December 15, 2021.

The time for implementing the prepared exercises for a period of (30 minutes) was taken from the major part of the college educational unit, which amounted to 90 minutes, knowing that the main section lasted for 60 minutes and the exercises were carried out at a rate of 50% of the main section.

- The researchers used simple educational methods and tools that aid in the speed and degree of learning, which are (the rope of the rope length of (1) meter and a width of (3) cm number (10), plastic barriers with a width of (60) cm, numbering (30) barriers, which are the number of barriers (10) with a height of (10) cm, number of barriers (10) with a height of (20) cm, number of barriers of (10) with a height of (30) cm.

- The number of repetitions for each portion of the activity was given, and the exercises were graded from easy to difficult, with a rate of (2 - 5) repetitions.

When designing the exercises, the type and gender of the sample were taken into mind.

During the activities, tools that were both safe and simple to use were used.

### 2.5.3 Post-tests

On Monday 20/12/2021, between 10:00 - 11:30 a.m., the two researchers conducted post-tests on the experimental and control groups in the same sequence and performance circumstances as were accepted and applied in the pre-tests.

### 2.6 Statistical means:

The two researchers processed their study's data using the statistical bag (SPSS).

3. Presenting and debating the findings of the pre and post tests for the experimental and control samples in the agility tests, as well as analyzing the performance of female students in the triple jump.

**Table (1) It displays the arithmetic means, standard deviations, and (t) values calculated for the control and experimental samples in the agility and performance evaluation tests of the triple jump and agility.**

| Group<br>variables     |              | Tests   |      |          |      | Calculated value of (T) | significance | Statistical significance |
|------------------------|--------------|---------|------|----------|------|-------------------------|--------------|--------------------------|
|                        |              | Pretest |      | Posttest |      |                         |              |                          |
|                        |              | s       | y    | s        | y    |                         |              |                          |
| Agility                | control      | 11.93   | 1.07 | 10.87    | 0.53 | 5.41                    | 0.000        | significant              |
| Performance evaluation |              | 3.62    | 1.67 | 4.91     | 1.34 | 5.75                    | 0.000        | significant              |
| Agility                | experimental | 11.87   | 0.50 | 9.19     | 0.71 | 5.19                    | 0.000        | significant              |
| Performance evaluation |              | 3.22    | 1.33 | 6.67     | 1.82 | 5.32                    | 0.000        | significant              |

**Table (2) displays the arithmetic means, standard deviations, and computed t-values for the post-tests of the control and experimental samples in the agility and performance evaluation of the triple jump and agility tests.**

| Group<br>variables |       | Posttests |      |              |      | Calculated value of (T) | significance | Statistical significance |
|--------------------|-------|-----------|------|--------------|------|-------------------------|--------------|--------------------------|
|                    |       | control   |      | experimental |      |                         |              |                          |
|                    |       | s         | y    | s            | y    |                         |              |                          |
| agility            | score | 10.87     | 0.71 | 9.19         | 0.71 | 4.92                    | 0.000        | Significant              |

|                        |  |      |      |      |      |      |       |             |
|------------------------|--|------|------|------|------|------|-------|-------------|
| Performance evaluation |  | 4.91 | 1.82 | 6.67 | 1.82 | 4.89 | 0.000 | significant |
|------------------------|--|------|------|------|------|------|-------|-------------|

### 3.1 Results discussion

The (t) test was used during the presentation of the results of the agility test and performance evaluation of the triple jump, which is shown in Table (1) (2), and there was a significant effect of differences in the two tests, for the control and experimental groups, in favor of the experimental group and for the stages of the triple jump for the agility variable, indicating that the exercises prepared were effective. It aided in improving and learning the performance of the triple jump, as well as the students' agility, indicating the students' mastery of the performance stages and correct motor transfer of the jump stages, and thus good learning (on the other hand, the amount of the motor transfer index represents the amounts of force transfer between the muscles working on the joints participating in the motor performance). It is associated with a state of tension and relaxation that does not come to an end.

We also notice a relative development for the experimental group in both tests, indicating that the teacher's curriculum only achieved a small portion of the development, so the results appeared significant for the control group, and that this development in agility and performance would be good and at an excellent level if both samples used the Special exercises prepared by the two researchers.

While the experimental sample performed well in the post-tests, the results in Table (2) show that the differences were in favor of the experimental group that learned particular exercises based on the steps of right performance of the effectiveness. The researcher believes that the members of this group who used these exercises were able to consolidate their knowledge.

The information provided to the learners in the technical performance and learning process contributed to bringing the movement to the automatic, so that the research sample enjoyed agility, which is an important element in this event, as it is clear that the learner requires speed and consistency in the performance of this activity, and agility is the sum of these two attributes.

The two researchers believe that the reasons for the experimental group's progress are attributable to the substance of the educational exercises provided by the two researchers to develop the technical performance of the Triple Leap. In light of this, tactics and activities that are consistent with the curricula's content in proportion to the learners' abilities, motives, and trends are produced or chosen, and they also contribute to establishing a successful and purposeful evaluation in exchange for the educational output.

## 4. Conclusions and suggestions

### 4.1 Conclusions

1. The provided exercises had a good influence on the development of agility in the research sample's female students.
2. The researchers' activities influenced the learning effectiveness of the triple jump for the female students in the research sample.
3. The teacher's course of study. The material aided in the development of agility and knowledge for the triple jump.
4. The experimental sample outperformed the control sample in post-test outcomes, indicating a preference for post-test results for the experimental group of female students.

### 4.2 Recommendations

1. The researchers advised that the female students in the research sample use the exercises designed to improve their agility and technical performance in the triple jump.
2. The workouts produced for other samples can be employed and contribute to their performance development and learning.
3. Coaches can apply the particular exercises that have been designed in their players' training.

**References**

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- 2) Sareeh Abdul Karim: Applications of biomechanics in sports training and motor performance, Baghdad, Uday Al-Akaili Press, 2007.
- 3) Khaled Ibrahim Kazem: Achieving Educational Objectives in the Light of Its Fields, Levels, Characteristics, and Applications, Baghdad, Research Center for Educational Studies, 2010.

## Appendix

### Appendix 1

#### Form for evaluating the stages of technical performance of the triple jump

Honorable Professor...

Please accept my greeting.

The joint study will be carried out by the two researchers (the effect of special exercises for developing agility and learning the effectiveness of the triple jump for female students).

And, because you have field experience, please offer your thoughts on each stage using the accompanying form.

Thank you very much.

Please keep in mind that each stage is graded on a scale of (10) points.

| N | Name | Approach |          | The hop |          | the step |          | The leap |          | Full performance |  |
|---|------|----------|----------|---------|----------|----------|----------|----------|----------|------------------|--|
|   |      | pretest  | posttest | pretest | posttest | pretest  | posttest | pretest  | posttest |                  |  |
|   |      |          |          |         |          |          |          |          |          |                  |  |
|   |      |          |          |         |          |          |          |          |          |                  |  |
|   |      |          |          |         |          |          |          |          |          |                  |  |
|   |      |          |          |         |          |          |          |          |          |                  |  |
|   |      |          |          |         |          |          |          |          |          |                  |  |
|   |      |          |          |         |          |          |          |          |          |                  |  |
|   |      |          |          |         |          |          |          |          |          |                  |  |

### Appendix 2

The names of the experts and professionals who will be evaluating technical performance

1- Prof. Muhammad Jassim Al-Hilli / University of Babylon College of Physical Education / Biomechanics Athletics

2- Khaled Muhammad Jassim Al-Yasiri / College of Physical Education and Sports Sciences / University of Babylon / Athletics Training

3- Haider Falih Hassan / College of Physical Education and Sports Sciences / University of Babylon / Athletics Training

### Appendix (3)

#### Exercises that are unique

#### Remarks on the Special Workout app

The two legs agility workouts were chosen based on the technical steps for accomplishing the triple jump. On this basis, partridge exercises for both legs, the use of jump boxes, and other jumping exercises were performed by determining the maximum time for performance and the number of repetitions in a specific time or the distance accomplished in a specific time, such as when performing three Run steps and then partridge for five consecutive times with barriers or boxes at spaced distances and in a total estimated time, such as (20 seconds) to ensure that we attained the idea of (speed and compatibility) with these activities, as this development in (agility) was assessed by testing.