THE EFFECT OF EXERCISES FOR SOME COMBINATORIAL ABILITIES IN LEARNING THE PHASE OF FLYING OVER THE BARRIER FOR THE EFFECTIVENESS OF THE 110 HURDLES SPRINT

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SUMMARY OF THE RESEARCH

Most of the complex sports activities need a clear strategy for the learner, since the stability of tactics does not constitute a unit of learning good skills, so you need exercises that facilitate the process of developing tactic skills to increase compatibility and harmony in terms of kinetic representation of performance, which is called additional exercises that will improve performance and in organizing sports. The skill training (depending on the nature of the effectiveness) is not sufficient to achieve stability in performance, and therefore there is a specific need for training that facilitates the process of increasing capabilities and facilitating performance. The researcher used the experimental method by designing the control and experimental groups with the pre and post tests and calculating the difference between them. The research sample included the students of the second stage in the intentional manner in the College of Physical Education and Sports Sciences - University of Basra for the academic year 2021/2021, and their number was (10) students who were randomly divided into two control and experimental groups each. A group of (5) students and homogeneity was calculated between them. A test of running 110 hurdles was conducted for the two groups to find out the level of impact of exercises on learning the stage of flying over the barrier and thus improving their achievement. The fourth chapter included a discussion and analysis of the results of the running test through the use of statistical treatments. The final results were obtained and the researcher had sufficient information about the results of the field practical experiment that he carried out on the research sample. The results indicated significant differences at the end of the experiment, as the results proved that there is progress tangible in the level of achievement of the research sample.

As for the fifth chapter, it included conclusions and recommendations, including:

1- The use of exercises for some combinatorial abilities contributes to improving the learning process of the effectiveness of 110 hurdles by developing the flight phase in crossing the hurdle.

2- It can be used in schools, education, the effectiveness of running obstacles, for ease of application.

3- Conducting analytical studies for these means in terms of kinetic analysis to find out their usefulness from a mechanical point of view.

1-1 Introduction and importance of research

The world has witnessed an increasing scientific development in various matches and activities, according to her opinion, the sports field, which has gained a share of this development as a result of studies and research that were interested in this field if it relied on scientific foundations and various sports sciences and exploiting the overlap between sciences using more information, theories and methods that ultimately aim at development. Harmonic abilities are considered one of the important things in athletics activities, including the effectiveness of 110 hurdles due to the runner’s need for coordinated neuromuscular and organized processes to match the achievement of running and crossing the hurdles with a high flow” (2: 68: 2006).

1-2 Research problem
The difficulty of performing the activity (110m), which depends on speed and technical performance, which required the emergence of many studies and research that changed the prevailing concepts and beliefs and accordingly. The stage of crossing the barrier is one of the most important difficulties facing the runners of the activity (110 m) barriers, including the difficulty of fearing the barrier, i.e. the fall of the barrier and thus from injury, especially university students while learning the performance stages of the event, as well as their poor achievement due to their weak compatibility abilities.

1-3 Research Objectives

1- Learning the stage of flying over the barrier for university students as part of exercises for some harmonic abilities.

2- Knowing if the harmonic abilities are affected by the exercises used under study.

1-4 Research Hypotheses

1- The exercises used for some harmonic abilities had a positive effect on learning the effectiveness of 110 hurdles for the stage of flying over the hurdle.

2- There are statistically significant differences between the pre- and post-test in achieving the effectiveness of 110 barriers.

1-5 Research Areas

1-5-1 The human field: students of the second stage, College of Physical Education and Sports Sciences / University of Basra.

1-5-2 Time range: for the period from 11/12/2020 to 12/1/2021

1-5-3 Spatial domain: the course of the College of Physical Education and Sports Sciences, University of Basra

2-1 Harmonic capabilities:

Kinetic interconnectivity (6:53:2001)

The compatibility between the nervous system and skeletal muscles on the one hand, and between the nervous center and internal organs on the other hand, plays a distinct role in the success of athletic achievement. Also, the acquisition of early compatibility ensures the basis for the ability to general compatibility, which makes this compatibility a basis for competition, as this compatibility is like the athlete’s acquisition of strength, speed, span and other kinetic qualities, in order to ensure the following:

1- Achieving the final limits of the type of achievement and then the type of movement activity.

2- Achieving mechanical and dynamic processes.

3- The intellectual ability to comprehend tactics.

4- Adapt balance to changes according to skill requirements.

5- Acquisition of kinesthetic, reaction and spatial orientation.

6- Avoid injuries.

From this, we see that mathematical skills require highly organized compatibility, and this also requires programmed mental processes to control and adapt according to the main objectives of motor interdependence (harmonic ability). Who relies on the retrieval of sensory information for the nervous system that organizes educational programs (Super Netek), and this is done through the motor neuron pathways at the spinal cord, and the subject of the processes of detecting mutual motor impulses in sports activities programmed according to previous organized training through neurophysiological processes

I. RESEARCH METHODOLOGY AND FIELD PROCEDURES

3-1 Research Methodology
The nature of the requirements of the problem to be studied is what determines the research approach. Each research has its own approach, which is the way to solve the problem and the terminator (it is the way that depends on aggressive and deductive thinking and uses methods of scientific observation and imposing assumptions and freedom to solve a specific problem and reach a specific result) (5:24 : 1990 )

Where the researcher used the experimental method by designing the control and experimental groups with the pre and post tests and calculating the difference between them.

2-3 Research sample

The researcher chose the research sample in a deliberate way and included students of the second stage, Division (A) in the College of Physical Education and Sports Sciences / University of Basra, and their number is 30 students. (10) students were selected by lot, and then divided into two control and experimental groups, each group (5) students. The proportion of the original research community was 10%

3-3 Homogeneity of the research sample

The researcher conducted the process of homogenizing the sample to search for the variables of height, weight and age, as shown in the following table.

<table>
<thead>
<tr>
<th>Variables</th>
<th>measuring unit</th>
<th>Arithmetic mean</th>
<th>standard deviation</th>
<th>skewness</th>
<th>The significance of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>height</td>
<td>Cm</td>
<td>166.18</td>
<td>4.41</td>
<td>0.517</td>
<td>Un incorporeal</td>
</tr>
<tr>
<td>weight</td>
<td>Kg</td>
<td>65.37</td>
<td>1.85</td>
<td>0.219</td>
<td>Un incorporeal</td>
</tr>
<tr>
<td>age</td>
<td>year</td>
<td>19.3</td>
<td>0.978</td>
<td>0.138</td>
<td>Un incorporeal</td>
</tr>
</tbody>
</table>

* Table (1) shows the skew coefficient is not a statistical function for the variables (height - weight - age), which indicates the homogeneity of the sample

3-4 Means and tools used

3-4-1 Means of collecting information

Tests and Measurements

A questionnaire form to determine the most important harmonic capabilities provided

Student test results registration form

3-4-2 The track of the College of Physical Education and Altitude Sports / University of Basra Athletics

- Number of hurdles (10).
- 2. whistle
- stopwatch counting 2

(1) Laptop Calculator

A Chinese-made rest meter for measuring height and weight

3-5 tests used in research

1 - Achievement test that ran 110 hurdles.

3-6-1 Pre-test
The pre-test was conducted on 12/15/2020 and all test variables have been installed.

3-6-2 The main experience

The researcher relied on the development of the proposed exercises to develop harmonic abilities on the opinions of experts and scientific sources. The researcher prepared a set of exercises, as in Appendix (1), for a period of four weeks, at a rate of two units per week for application through the field and field lectures. Each exercise (5) minutes is applied in the main section of the lecture for the experimental group.

3-6-3 Post-test

The post-test was conducted on 9/1/2021, and all the variables of the pre-test were preserved as much as possible.

II. PRESENTATION, ANALYSIS AND DISCUSSION OF THE RESULTS

4-1 Presentation of the achievement results for running the hurdles for the difference between the pre and post tests for the experimental and control groups.

Table (2)

It shows the arithmetic mean, standard deviation, and the calculated and tabulated T-value of the achievement results, which ran 110 hurdles for the pre and post tests for the experimental and control groups.

<table>
<thead>
<tr>
<th>groups</th>
<th>measured dimensional arithmetic mean</th>
<th>Tabular T value at an error rate of (0.05)</th>
<th>indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>experimental group</td>
<td>second</td>
<td>19.9</td>
<td>1.17</td>
</tr>
<tr>
<td>control group</td>
<td>second</td>
<td>21.2</td>
<td>1.12</td>
</tr>
</tbody>
</table>

From the above, the arithmetic mean of the pre-test results for the experimental group was equal to (19.9) and the standard deviation was equal to (1.17) and the arithmetic mean of the results of the post-test was equal to (17.1), while the standard deviation was equal to (1.11) and by using a test of significance between two related arithmetic means, the calculated t-value appeared (15.88). While the tabular t value at the degree of freedom (9) and the error rate (0.05) equals (2.26), and since the calculated value is greater than the tabular value, as there is a significant difference between the two tests and in favor of the post test. While the arithmetic mean of the pre-test results for the control group was left (21.2) and the standard deviation was equal to (1.12) and the arithmetic mean of the results of the post-test was equal to (20.6), while the standard deviation was equal to (1.10). While the tabular value of t was at a degree of freedom (9) and an error rate of (0.05) is valid (2.26), and since the calculated value is greater than the tabular value, as there is a significant difference between the two tests and in favor of the post test.
This was confirmed by Raysan Khreibet and Abul-Ela Abdel-Fattah (2016) that in fact, the essence of training planning is planning to achieve physiological reactions of the body to any physical load that falls on it and through the body’s response to achieving physiological adaptation and raising the level of athletic performance (1:301). Hossam El-Din, who indicated that “the development of training curricula for the basic objectives, and the selection of exercises that suit the nature of effectiveness in each training unit and over the time period of the units is one of the most important criteria for the success of the training curriculum (3: 210: 1994). Qasim agrees with him in his opinion. It is imperative that “the use of exercises that are consistent in the nature of their performance with the general form of performance and specialized skills leads to better results in gaining strength” (4: 24: 2005)

4.2 Discussing the results

The researcher attributes these results to the effect of the proposed exercises that the researcher applied on the members of the research sample, as the balance as seen by Wajeeh Mahjoub (6: 59: 2001) is the ability to maintain the stability of the body when performing various skills and motor and fixed positions or in the case of rotation and movement, as well as Maintaining the body’s center of gravity in special and complex multiple sports situations, and this means the ability to use inertia, ear safety, sensations, and the link between the sense of hearing and the sense of sight (1). The researcher believes that the sense of balance is of great importance in crossing the barrier as it requires control of the movements The body of all kinds as a result of the presence of the influence of external forces on the center of gravity of the body that requires continuing the movement or trying to control the stability of the body. The moving center of gravity

Discussing the results of the two groups (experimental and control) in completing 110 hurdles (before - after)

The difference was significant for the two groups between the pre-test and the post-test and in favor of the post-test. The researcher attributes the reason to the fact that the members of the two groups were exposed to programmed educational exercises at a rate of two units per week for a period of 6 weeks in the field and field lectures.

Chapter V

III. CONCLUSIONS AND RECOMMENDATIONS

5-1 Conclusions

Based on the research objective and hypotheses, within the limits of the study sample, the research method used, and the nature of the methods used to analyze the results, the following can be concluded:

1- The use of purposeful and auxiliary exercises is very helpful in advancing the level and learning to fly over the barrier for the effectiveness of 110 hurdles.

2- Adaptation of the exercises used to the nature of learning and improving achievement among students of the Faculty of Physical Education.

5.2 Recommendations

1- The use of auxiliary exercises in the process of teaching and training all obstacle courses.

2- It can be used in schools to teach the effectiveness of obstacle running for ease of application.

3- Conducting analytical studies for these means in terms of kinetic analysis to find out their usefulness from a mechanical point of view

Appendix(1)

Suggested exercises

1. Swinging the leg back, supported by a barrier or leaning on it. Flexion at the hip should be avoided

2. Leaning on one leg on the ground and the other leg on the top of the barrier. Bend the leg leading from the knee joint with a movement from the hips forward.

3. Sitting on the floor with the legs open 90 degrees, and changing the direction of the head. Here sitting is in the position of crossing the barrier, there is a bend forward and backward and with the circles of the upper body
4. The standing leg. It rests on the edge of the barrier. With bending forward the leg resting on the ground and sideways to the barrier towards the leg resting on it.
5. Performing large circles for the soft part of the gin by rotating the arms in a standing position, regardless of the position of the legs.
6. Performing trunk bends forward and backward from a standing position.
7. Standing on one leg with the upper body bent forward towards the front leg, reaching the position of the shoulders below the knees.
8. Putting the upper part of the body in a position on the sides of the legs and between them in a semi-straight position.
9. Sit on the ground in the position of crossing barriers. A change in the leading leg (the leg extended forward), with the help of pivoting and resting the torso back on the ground.
10. Raising the bent leg and resting it in the position of the barrier with the leg of interest resting on a low position from the ground, with the upper part of the body bent forward and towards the leg of the leg of interest.
11. - Sitting in the position of crossing barriers. The blocked leg (leading leg) is brought as far forward as possible and then brought back again with the homosexual leg (leading leg). The same thing is repeated. Barrier work.
12. Bend forward in a sitting position with the ankles together with both hands for 15 to 20 seconds.
13. Sitting in the position of crossing barriers. Bend forward while holding the ankle for 15 to 20 seconds.
14. Sitting on the ground with the soles of the feet together. And with the knees open to the side
15. Jumping with one leg on the side of the barrier with the whistle.
16. Closing the eyes and jumping from the barrier teams from a steady and flapping position.

Appendix (2)

learning unit model

<table>
<thead>
<tr>
<th>Educational unit</th>
<th>time</th>
<th>sections</th>
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</thead>
<tbody>
<tr>
<td>Slowly jog</td>
<td>3 minute</td>
<td>10 minute</td>
</tr>
<tr>
<td>Warm-up exercises (flexibility, percussive jumping exercises, 50-meter accelerations)</td>
<td>7 minute</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>notes</th>
<th>rest</th>
<th>Groups</th>
<th>Repeats</th>
<th>goal</th>
<th>Number exercise</th>
<th>50 minutes</th>
<th>main section</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>30 s</td>
<td>2</td>
<td>5</td>
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<td></td>
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<td></td>
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<td>2</td>
<td>5</td>
<td>2</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>30 s</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td></td>
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</table>

Cool-down exercises with general flexibility exercises 5 minutes concluding part

REFERENCES:
4. Qasim Lazam: Topics in the Face of Kinetic Learning, Dar Al-Ilm, Baghdad, 2005