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The effect of experimental educational exercises to develop and measure some physical abilities and shooting accuracy from high jumping for young handball players

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Abstract---*Introduction to the research and its importance: The researchers discussed the importance of using modern training methods in training and special exercises and their effectiveness in developing physical abilities, which in turn reflected positively on developing accuracy of correction, which is one of the basics on which correction skills in the game of handball are built.Research problem: During the researchers' observation that they are coaches and former players of the handball game, and through field follow-up to the Youth League, he noticed that there is fluctuation in the technical performance of the accuracy of correction for these players, represented by the lack of use of special exercises, which enables them to do their best in training and competitions, so the researchers decided to study This problem is through preparing special exercises for some physical abilities and knowing their impact on the performance of accurate correction from high jumping for young handball players.*

Research objectives:*Preparing special exercises for the development of some physical abilities and accuracy of correction from high jumping for young handball players.*
Identify the differences between the pre and post tests of the research sample, according to the effect of special exercises on some physical abilities and the accuracy of correction from high jumping for young handball players.

The two research hypotheses:*The special exercises used have a positive effect on the development of some physical abilities and the accuracy of shooting from high jumping for youth handball players.*
2. There are statistically significant differences between the pre- and post-tests of the research sample due to the effect of special exercises on some physical abilities and the accuracy of shooting from high jumping for young handball players and in favor of the post tests.

Fields of research: *The human field: the players of the Army Club for the youth category of ages (17-19) years, the temporal domain: from 12/10/2019 to 4/20/2020, the spatial field: the closed hall of the Wissam Al Majd Sports Club.*

Chapter Three: *This chapter included a presentation of the results of statistical treatment using a set of tables, then analyzing and discussing them in an accurate scientific manner and supported by scientific sources through this discussion, then reaching the research objectives and verifying the research hypothesis.*

Chapter Four: *The conclusion included conclusions, including (the organization of the performance and application of special exercises according to the curriculum prepared by the researcher for the research sample contributed to raising the level of performance of some physical abilities and the accuracy of correction from jumping high with the handball and this was shown through the dimensional results) and recommendations from*

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them (necessity) Interest in the correction skill from high jumping, as it is one of the most important and difficult offensive skills, as well as it leaves more compatibility for the player by increasing accuracy during correction)

Type of Paper--- *Review*

Key words: *educational test exercises, measure, physical abilities, shooting, handball*

Introduction:

Introduction and the importance of the research.

The group games witnessed a great development in various physical, skill, written and psychological aspects, and handball is one of the group games that were included in this development and began to capture the interest of many observers and researchers due to its excitement, strength and speed in physical and technical performance.

The handball game has received special attention by experts and specialists working in its field, as international standards require the use of modern and appropriate training methods, and that the legalization of training, its loads, sufficiency, types and objectives, has become one of the important issues that those concerned with the game seek.

Special exercises are auxiliary means aimed at preparing the physical and mastering the movement performance of various sporting activities, as Muhammad Hassan Allawi defined them as "sports movements that are similar in composition as the combination of motor performance of strength and speed" (16:22)

And since physical abilities are one of the basic requirements for performance in the game of handball, which is thanks to them in performing the basic skills of the game, especially offensive ones, if the team that has good offensive skills (such as handling, receiving, stubbornness and correction) becomes a key factor in achieving victory in the game, so it must be taken care of and developed And the use of all that is new in order to promote it because of its positive impact on the morale of the team and its motivation and vital in the beginning of the attack process.

The skill preparation is one of the most important pillars of training that it depends on in developing the player's level in training and competition, as preparing a well-skilled player helps to develop his performance, especially in competitions, unlike the non-skillfuly prepared player, his performance is not stable, whether in training or competitions, and that the increase Training by coaches on complex skills similar to playing situations helps to improve the skills of the players, as the young player needs to regulate the repetition of these exercises in the special preparation period and to include the element of suspense and competition in order to create a competitive atmosphere between young players during the practice and application of practical exercises for basic skills .

By following up the researchers, being one of the trainers for this game, as well as being instructors in the College of Physical Education and Sports Sciences, the importance of research comes through preparing special exercises for some physical abilities and accuracy of correction from high jumping with handball and knowing the effect of these exercises on the performance of young players with handball.

Research problem.

During the researchers' observation that they are coaches for the handball game, as well as they are teaching staff in the College of Physical Education and Sports Sciences, and through field follow-up to the Youth League, they noticed that there is fluctuation in the performance of some physical characteristics and the accuracy of correction for these players represented by the lack of use of exercises for some physical abilities and accuracy of correction from Jumping high, which enables them to do their best in training and competitions, so the researchers decided to study this problem by preparing special exercises and knowing their impact on some physical abilities and accuracy of correction from jumping high for young handball players.

Research objectives.

- Preparing special exercises for the development of some physical abilities and accuracy of shooting from high jumping for young handball players.
- Identifying the differences between the pre and post tests of the research sample, according to the effect of special exercises on some physical abilities and the accuracy of correction from high jumping for young handball players.

Research hypotheses.

- The special exercises used have a positive effect on the development of some physical abilities and the accuracy of shooting from high jumping for youth handball players.
- There are statistically significant differences between the pre- and post-tests of the research sample due to the effect of special exercises on some physical abilities and the accuracy of shooting from high jumping for young handball players and in favor of the post tests.

Research fields.

- The human field / youth players of the Army Club in Ammar (17-19) years.
- The temporal domain / the period from 12/10/2019 to 4/20/2020
- Spatial domain / Wissam Al Majd Sports Club hall.

Research methodology and field procedures

Research methodology

The suitability of the chosen approach to the nature of the research problem to be resolved is one of the basics of scientific research, and the experimental method has been used in our research in the manner of one experimental group, as the experimental approach includes an attempt to control all the basic factors affecting the variable or dependent variables in the experiment except A single factor that the researcher controls and changes in a specific way, with the aim of determining and measuring its effect on the variable or dependent variables. (1: 194)

Research community and sample

The selection o[2]f the sample is one of the important pillars of the main scientific research process, as it "represents the community of origin or model on which the researcher conducts the whole and the focus of his work on it." (18: 181)

The researchers chose the research community by the intentional method represented by the youth handball players for the sports season (2016/2017), to represent the research community. The research sample was represented by the players of the Army Club for Youth who were deliberately chosen because the researcher could obtain this sample easily.

Means, devices and tools used in the research.

The means used in the research

- Arab and foreign sources.
- Easy Sports - Graphics2.Handball Demo program for drawing exams.
- Questionnaire for nominating the tests, as indicated in Appendix (1).
- Skill tests and test registration form.
- Personal interviews for experts and specialists.
- Auxiliary work team (*).

Devices and tools used in the research.

- Electronic calculator (Compag 610) Chinese-made, count (1).
- (FOX) type 2 whistle.
- 12 people.
- One (1) chair
- Medicine ball weighing (3) kg
- Fastening belt.
- tape measure.
- Chalk.
- 2 Chinese electronic stopwatch.
- 12 hand balls, number (3).

* Names of the assistant work team (M.M. Alaa Muhammad Jassim / M.M. Hassan Noori)

Research Tests

Throwing a 3 kg medicine ball with two hands from the sitting position on a chair. (106.15)

- **The aim of the test:** to measure the explosive force of the muscles of the arms.
- **Devices and tools:** a medicine ball weighing (3) kg, a measuring tape, a chair with a tightening belt for the torso.
- **Method of performance:** The laboratory sits on the chair and the medical ball is carried by hands above the head and the torso is adjacent to the edge of the chair, the belt is placed around the trunk of the laboratory and held from the back in a controlled manner for the purpose of preventing the laboratory from moving forward during the throwing of the ball with the hands so that the process of throwing the ball with the two hands without using the trunk as in In Figure 1, each laboratory is given three attempts and the best of them are scored.
- **Scoring**: Calculates the distance between the front edge of the chair and the closest point the ball touches the ground.

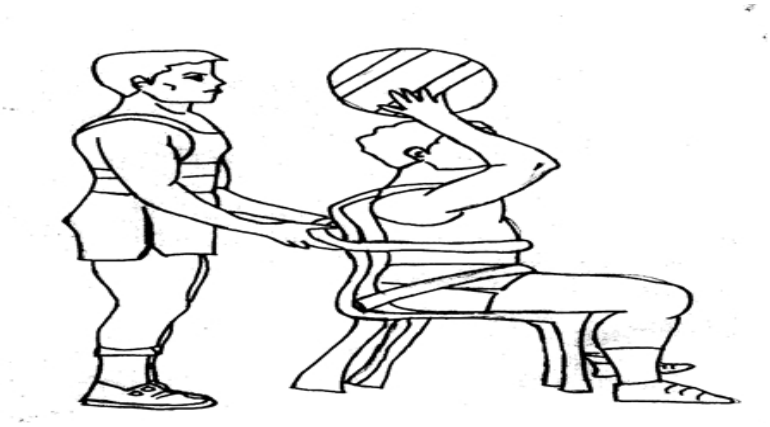

Figure (1) The medical ball throw test shows a weight of (3) kg from the back of the head from a sitting position on a chair

The Long Jump Stability Test (13: 176)

The purpose of the test: to measure the explosive force of the two men

Necessary tools:

- The jumping place is divided by meters and centimeters to the end of the field.
- tape measure.
- Cut off the markers.

Performance description: The tester stands behind the starting line and the feet are slightly apart and parallel. Then the tester begins swinging the arms backward with the knees bent, then jumping forward as far as possible by extending the knees and pushing the feet with the arms swinging forward.

Score calculation: The measurement is from the starting line to the last part of the body that touches the ground, and each attempt is measured to the nearest (5 cm) and the test is calculated for the best attempt.

Examining bending and extending the arms from a prone position for 10 seconds (11:71)

Assumption from the test: a measure of the force characteristic of velocity in the arms

Necessary tools:

- Stopwatch
- whistle

Performance description: From a prone position, both arms are bent and extended to the maximum number possible within 10 seconds.

the conditions:

A. The body took the correct tilted prone position.
B. Take into account the chest touching the ground while bending the arms and then fully extending them.

Scoring: Record the number of times you bend and stretch in 10 seconds.

Test the accuracy of the shot from high jump (8: 508)

The purpose of the test: the accuracy of the aiming from a high jump.

Tools: (12) handball, a high jump device with a height of (150 cm) and the distance between the two posts is (2 m), a curtain made of strong cloth or wire completely covering the goal with (4) holes each of them (40 x 40 cm) representing the four corners of the goal. The jumping device is placed on the 6-meter line and the start of the movement is 11 meters from the goal.

Method of performance: The player stands behind the starting line (according to the aiming hand) and directly in front of the jumping device, holding the ball, the player begins to take (2-3) steps and then leads the correction from jumping high to square (1) then to (2) then to (3) then to (4).
The performance is repeated (3) times, i.e., (12) balls three of them to each of the four squares, as shown in Figure (2).

Rules: Take no more than three steps.
Scoring: A point is counted from entering the ball into the shot square.

- Counts zero for a shot outside the square.
- The result of a shot from which a player moves more than three steps will not be counted.

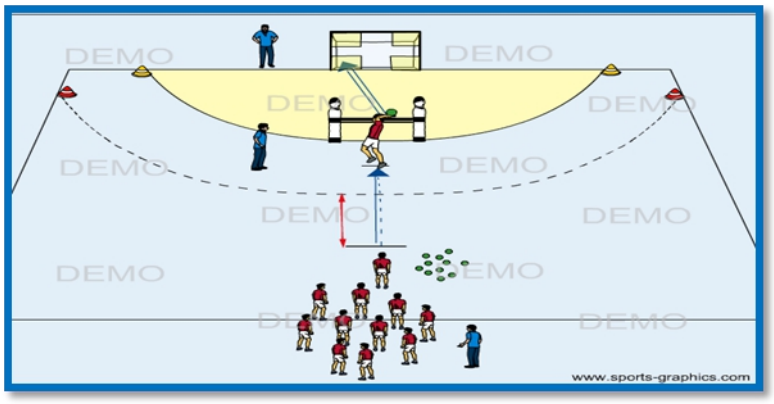

Figure (2) shows the performance of the shooting test from a high jump

scientific transactions of the tests (validity and objective validity)

Validity of the test: The researchers relied on extracting the validity of the test on the apparent validity, as they are standardized tests and used by more than one researcher and are frequent across many sources specialized in the field of the game.

Stability of the test: The researchers used the re-test method to find the reliability coefficient, as the tests were applied to the participants in the exploratory experiment on Tuesday (12/20/2019), and the test was repeated after (5) days and under the same circumstances, and the results were as in Table No. (1).

Objectivity of the test: The researchers sought help from arbitrators[*3] for the purpose of giving a real evaluation of the tests. Through the application of (Pearson)'s law, it became clear that all the tests were of high objectivity as shown in Table (1).

Table (1) showing the stability and objective coefficients for the physical and functional skill tests applied to the research sample

T	the exams	Persistence	Objectivity
1	**The explosive power of the muscles of the arms**	0.90	0.95
2	**The explosive power of the two men**	0.87	0.85
3	**The power of the two arms with speed**	0.92	0.97
4	**The accuracy of the shot from the jump**	0.903	0.893

The exploratory experience

Most of the research and studies emphasized the importance of the researcher's exploratory experience by identifying and avoiding obstacles in the main experiment, as the exploratory experiment is "a practical training for the researcher to find out the negatives and positives that are encountered during the test in order to avoid them" (10: 107), the researchers conducted the exploratory experiment On a sample from the research community of (3) players who are outside the research sample on Tuesday 20/12/2019 to find out the ability of the sample members to perform the tests used as well.

- Knowing the size and number of the auxiliary work team, and ensuring the validity of the tools and devices used in the research.
- Learn about the time spent in performing the tests.
- Ensure the suitability of the tests for individuals, the research sample, taking into account the safety of the players.
- Avoidance of errors and obstacles that may appear when implementing tests in order to overcome them in the main experiment.
- Training of assistants on how to apply tests and how to score scores.

pre-tests.

The researcher conducted pre-tests for the research sample for some physical characteristics and accuracy of correction included in the study, at the Wissam Al Majd Club hall on Saturday 25/12/2016, and the test conditions were taken into account from the time and place of the tests, as well as the tools used and how the tests are carried out, in order to be The conditions are as similar as possible to the post-test conditions.

special exercises used in the research.

- The researchers prepared special exercises within the framework of the training curriculum for the special preparation phase on the basis of the exploratory experiment that they carried out taking into account the available capabilities and the general level of the research sample based on its preparation on the scientific foundations of sports training and on some scientific sources and references, and the training curriculum focused on inclusion in developing some characteristics Physicality and accuracy of shooting for young players with hand reel.
- Special exercises were applied on (Sunday) 12/26/2019 until (Thursday) 3/26/2020 on the experimental group, and the training units were directly supervised by the researcher with the help of the team coach.
- The training curriculum included (12 weeks) during the special preparation phase that precedes the competition stage, at the rate of (4) units per week, which were days (Saturday, Monday, Tuesday, and Thursday), thus the total training units reached (48) units throughout the period of applying the training curriculum .

[*] Arbitrators: (M. Haydar Ghazi Aziz / M. Yacoub Youssef AbdelZahra).

- The training unit was divided according to the three sections of the unit, namely the preparatory, main and final sections.
- The duration of one training unit ranged between (90-120) minutes, as the part of the preparatory department was (20) minutes and the main section ranged between (65-90) minutes, the session of special exercises of which ranged between (40-75) minutes, and the final section (5 minutes.
- The researchers adopted the interval training method (high and low intensity) and the method of repetitive training in developing some physical abilities and accuracy of shooting from high jumping for young handball players, as Ahmed Oreibi affirms that "interval training is a method that aims to improve speed and strength distinguished by speed as well as developing a characteristic Prolongation of speed as this method is similar to what a handball player does in the match, the player runs, then rests, then runs and so on ... (4: 194)

dimensional tests

The researchers conducted the dimensional tests on Saturday 3/28/2017 in the hall of the Wissam Al Majd Club, after completing the special exercises with all its 48 units, and the researcher provided the same conditions in which the pre-tests were carried out.

statistical methods

The researchers used the ready-made program in the statistical bag (spss) in the statistical treatments.

Presenting, analyzing and discussing the results

The researchers presented their findings, analyzed and discussed them in order to identify the reality of the effect of special exercises on some physical characteristics and the accuracy of shooting with handball.
The results were analyzed in the light of the statistical laws used in the research and the suitability for these data in order to achieve the imposition of the research in light of the applied field procedures used by the researcher to arrive at these data, and then discuss them according to the scientific references.

Examination results show some physical characteristics and accuracy of correction with pre- and dimensional handball of the research sample.

Table(2) represents the arithmetic mean, standard deviations, and (T) value calculated for the pre and post tests of the research sample members for the searched variables

indication	T Tabular	T Calculated	Post test		The pretest		Variables
			P	s	P	s	
moral	**1.75**	**2.38**	**1.32**	**4.45**	**1.93**	**3.36**	**The explosive power of the muscles of the arms**
moral		**3.29**	**1.02**	**2.90**	**0.54**	**2.10**	**The explosive power of the two men**
moral		**4.99**	**2.12**	**30.33**	**1.97**	**20.35**	**The power of the two arms with speed**
moral		**3.10**	**2.55**	**8.65**	**2.75**	**6.86**	**The accuracy of the shot from the jump**

Below significance level (0.05) (n-1) = 15

Discuss the results.

Through what was shown in Table (2) which shows the arithmetic mean and standard deviations and the test (T. test) of the members of the research sample for the level of performance of some physical characteristics and the accuracy of shooting with a hand ball in the pre and post tests, and the results showed the significant differences for the players in the post tests, and the researcher attributes To the use of special exercises and relying on the interval training method, this

development has resulted in the research variables, which confirms the effective impact of various physical exercises for the development of explosive strength of the leg muscles that have adopted jump-forward exercises in addition to jumping exercises to the terraces or landing (plyometric exercises) to develop strength The explosiveness of the muscles of the legs, and this agrees with the opinions of many sports training experts who believe in the use of exercises Albulaym leave an important training method for the development of explosive power. (5: 121) (2: 116)

This also agrees with what was indicated by (Abu Al-Ela Ahmad and Muhammad Hassan Allawi) that (the period of muscle contraction is inversely proportional to the strength, so the smaller the period of muscle contraction, the greater the strength) (1: 124). (Mufti Ibrahim) believes that the shorter the period of muscle contraction, the greater the muscle strength and the higher the rate of contraction. (17: 138)

The researcher attributes the reason for this development to that the exercises applied by the sample members, which have proven effective in developing the explosive power of the muscles of the arms through the results obtained, as (medical balls of different weights) were used with a movement path similar to the motor path of the skill, in addition to all the exercises that were performed According to the correct mechanical foundations through the gradual performance of movements from stability and movement, and then jumping with one arm and both arms, taking into account the gradient in the difficulty of exercises to serve the motor activity and its goal and by using the muscle groups involved in the throwing process, which led to an increase in the ability of the muscles to Contract at a faster rate when performing successive movements mixed with force and speed in the movement performance.

The researcher also took into account the gradual progression in the difficulty of exercises to serve the motor activity and its purpose, and this is what was confirmed by (Abdulaziz Al-Nimr and Farhan Al-Khatib) that the most important characteristics of explosive force is that it increases motor performance, meaning that the strength gained from this type of training leads to activity Movement is better in the athletic activity practiced by increasing the ability of the muscles to contract at a faster and more explosive rate during the range of motion in the joint and at all movement speeds. (9: 114) Thus, it can be said that the exercises used in the training curriculum contributed to the development of the explosive power of the arms

And also, which confirms the effective effect of physical exercises used in the training curriculum for the development of muscle groups that contribute to the development of the characteristic strength and speed of the muscles of the arms using a variety of exercises, which focuses on performing repetitions characterized by rapid and strong muscle contractions in order to increase muscle elasticity and obtain the largest possible movement energy. Through strong and rapid pushing against external resistance, and this improvement is also due to the training method and the various exercises within the vocabulary of the training curriculum, and this is consistent with what (Mufti Ibrahim) said of (The methods and training methods used in developing strength characterized by speed are the method of high-intensity interval training.). (17: 144) And that the force characterized by speed is related to skill performance, the higher the degree of skill performance, the higher the level of compatibility between fibers and muscles, and the better the level of dynamic distribution of motor performance.) (3: 133)

The researcher believes that this development in the characteristic of strength characteristic of speed is a result of the development in the characteristic of strength, and this comes in line with what (Qasim Hassan Hussein) asserted that “one of the basic methods of developing strength distinguished by speed is through the development of strength.” (12:84) "The consistency within and between muscles helps in increasing the speed of movement (ability), so when the work of the muscles is in harmony, their efforts are determined to overcome the external resistance more quickly." (7: 526)

There is also a difference between the results of the pre and post tests, in favor of the post test in testing the accuracy of the correction from high jump. The results showed that the calculated value of (t) is greater than the tabular value of (t) at the degree of freedom (15), and below the level of significance (0.05). Emphasizes the positive and effective effect of the training curriculum from the different and varied special exercises, as well as the precision exercises in various forms that permeated the training curriculum units, which led to the rapid and explosive development of the muscles of the arms and legs, by increasing the number of repetitions and performing the exercises with a movement path similar to the movement path of skill by It works to develop the physical and skills side at the same time. The exercises that were used in the training curriculum, which were applied to the research sample, tend to develop all the variables related to the performance of the skill by organizing the work of the muscle groups towards the motor duty.

"The focused training of muscle strength and explosive power of the arms and legs leads to an improvement in the level of correction and accuracy in handball." (19: 168) (14: 155)

Conclusions and recommendations

Conclusions

By presenting, analyzing and discussing the results of the pre and post tests of the research sample, the researchers were able to reach the following conclusions:

- The use of the two special exercises led to the development of some physical abilities and the accuracy of shooting from high jumping for young handball players.
- The results showed, through the post-tests, an improvement in the performance level of the research sample in some physical abilities and the accuracy of correction from high jumping for young handball players and in favor of the post test.
- Organizing the performance and application of special exercises according to the curriculum prepared by the researcher for the research sample contributed to raising the level of performance of some physical abilities and the accuracy of correction from high jumping with handball, and this was shown through the dimensional results.

Recommendations

Through the conclusions reached, we can come up with the following recommendations: -

- The importance of using the exercises prepared by the researcher, as they are effective for the ages of this stage because they led to the development of the variables discussed.
- The need to pay attention to the shooting skill from jumping high, as it is one of the most important and difficult offensive skills, as well as leaving more compatibility for the player by increasing accuracy during correction.
- Conducting comparative studies in the use of exercise on sporting events to know the effect of these exercises between sports.
- Conducting studies on different samples from both sexes in the handball game.

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