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The Impact of Visual Feedback in Improving Technical Performance and Athlete Achievement of Long Jump Efficiency to Athletes Students

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Abstract:

identifying the importance of a proposed programme in improving the technical performance and the athlete achievement of long jump efficiency to athlete students. The researcher used the experimental method by designing two groups; the experimental and the regulator with two parameters; the before and the after which fit the nature of the study on a sample consisted of 3rd. The study showed that the instructional programme which is based on feedback has an impact in improving the technical and kinetic performance of long jump and in the athlete's performance and achievement.

Keywords: visual feedback, long jump, athlete performance.

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I- Introduction :

The development in the field of motor learning is the product of multiple trends in research that depend on performance results, which are new scientific vocabulary based on added concepts to find other fields of research and study that help in the development of achievement.

Feedback is one of those vocabulary that is of great importance in the field of teaching as one of the most important scientific foundations through which an informational base could be built that deepens the vision in performance requirements and helps in motor guidance and adjustment of the motor level control.

Feedback has an important and effective role in the development of scientific and practical ability, as providing the student with positive and negative information about motor performance contributes significantly to reaching skill mastery, especially if it is associated with modern means derived from audiovisual, Through the means of presentation, such as educational videos as well as cinematography, Where (Berger 1971) sees, "The art of using video feedback lies in how the registered material is displayed to the client or customers, where that recorded material is discussed with them, studied and analyzed, and the strengths and weaknesses of their behavior are known in order to mitigate its severity.

As (Alger and Hajon 1966) sees “The means that have image and sound can be useful, and not exaggerated because they are a means of learning.” (Nayel Al-Asmy, without year, 44, 49)

“Athletics is one of the sports events that has adopted the advanced scientific method in improving performance based on the sciences associated to athletics, and because of its importance in improving the level of performance such as sports training, biomechanics, physiology, anatomy, psychology, statistics, tests, measurements and motor learning.”

Where motor learning is considered one of the important sciences in the field of sports education because of its importance to the acquisition of motor skills with the least possible effort (it is the process of acquiring, mastering and stabilizing sports skills), and its methods and techniques have varied throughout these years through research and studies to improve the standard of sports in different sports.

Through the rapid development experienced by the events of track and field games especially the activity of the long jump, which was the result of the use of modern and scientific educational means in learning this activity to reach the highest levels in terms of technical performance and sporting achievement. the long jump is one of the activities of athletics which occupies a prominent place in track and field competitions where it is practiced in all age categories (Mustafa Abd Mohyi, 2010, pp. 4,5).

The modern learning process according to the methods used and modern techniques has an effective role in improving the digital level in the activity of the long jump for learners, and there are many educational programs, including the use of visual feedback through educational units to teach the activity of the long jump, as it is known as “the feedback received by learner seeing through his vision of his recorded behavior, by re-presenting it through a videotape or cd (Imad Kanaan, 2014, p. 71).

Through the above, the researcher will address one of the modern methods in the educational process, namely visual feedback using the presentation and model in the development of the long jump sports stages among third-year students specializing in athletics.

1. Problematic:

The long jump activity is distinguished by speed and strength, and its technical performance stages include four stages (approximate run, take off, flight, and landing), and each stage aims at solving specific motor tasks.

The approach phase creates the horizontal speed, thetake offphase creates the vertical speed, and the vertical position stability of the body is maintained during flight. As for the landing phase, it must be as far as possible by pushing the two legs forward while maintaining balance. However, each stage needs to be properly prepared in order to improve the stages that follow. (Abd al-Rahman 2000, p. 14)

Hisham Al-Jayoush(1999) states that the level of motor performance depends on the individual's potential to exploit his abilities to achieve skill goals and that the compound motor performance cannot be implemented n a special way unless it is subjected to research and analysis

from multiple aspects under the laws and rules of biomechanics in preparation for reaching the best results (Hisham Al-Gayoush, 2004, 4).

Jamal AlaaAl-din (1994) also points out that motor performance "is the objective measure on which you can depend on in the player's performance of any motor skill, and performance from a biomechanical point of view is a complex dynamic system of motor and target-oriented actions structures through the specific activity that leads to achieving higher levels " (Jamal, 1978, 20, 21).

The importance of feedback through (Brinko 1993 and Gibbs & Hogarth, 1991), indicates that the role played by feedback in education stems from the principles of the correlational and behavioral theory that emphasizes the fact that an individual changes his or her behavior when he or she knows the results of his previous behavior. (Imad Saleh Abd ًAl-Haq, Ahmed Mustafa, 2006, 4).

Based on classical learning theory, some forms of physical and sports education are necessary for the occurrence of motor learning, It is possible to know the methods and motor improvements in motor skill using actual physical education, which sensory organs (e.g. audiovisual) give to the movement achiever as a result of his movement… And when the internal sensory feedback is not available, the requirements of the task are unclear and the learner does not discriminate between the target and the required movement. Therefore, additional (external) feedback is necessary in order to achieve learning. (Wissam Salah, Wissam Riyad, 2012, 364).

According to the researcher, the role and importance of feedback using visual means is in the process of improving performance using photography and educational videos, which is expressed by: (Alger & Hagan1966) about their role, saying that "the means that have the image and the sound, can be useful and not exaggerated, because it is a means of learning, and eliminates the need to take notes."

Berger (1971) argues that the art of using video feedback lies in how the registered material is displayed to the client or customers, where that recorded material is discussed with them, studied and analyzed, and the strengths and weaknesses of their behavior are known, with a view to mitigating its severity." (Nayel Al-Asmy, without year, 44, 46).

The success of the educational process requires the teacher to be optimally familiar with everything related to modern teaching methods and techniques, as well as ways of conveying information through the use of audio-visual means such as (display tapes, pictures ..... etc.), as well as various teaching methods, Which achieve optimal performance opportunities for sports skills, through which the learner's strength becomes clear in understanding the parts of the skill or movement and its components.

However, the observation and through the fact that the researcher is a professor of athletics and has taught many batches in the field of athletics sees a lack of linking the stages of the long jump activity, especially among students who are about to graduate and who will become professors in the future, despite their practice of this sport in the gradual phase, Also, many teachers, despite the availability of modern technological means ignore such specific means in improving and developing performance during educational classes of different sports and jumping in particular, which saves time and effort for the teacher and made the researcher carry out this study through the application of a program based on visual feedback through (photography and presentation).

* Does the visual feedback have an impact on improving technical performance and the achievement process for the long jump?

1.1. Sub-questions:

The sub-questions of the study were as follows:

* Are there statistically significant differences between the pre and post tests of the experimental sample members in technical performance and achievement in the long jump?

* Are there statistically significant differences between the pre and post tests for the members of the control group in the technical performance and achievement of the long jump?

* Are there statistically significant differences in the post tests between the members of the two groups in technical performance and achievement in the long jump?

1.2. Study Hypotheses:

1.2.1. General Hypothesis:

Visual feedback has an impact on improving technical performance and athletic achievement for the long jump activity.

1.2.2 Partial Hypotheses:

- There are statistically significant differences between the pre and post-measurements for the experimental group members in improving performance and achievement for the long jump activity.
- There are statistically significant differences between the members of the control group in the pre and post-measurements in improving performance and achievement.

1.3. Study objectives: The current study aimed to find out the following:

- To know the importance of the suggested program that is based on visual feedback in improving the technical performance and the achievement among the experimental group members.
- To know the importance of the professor through the programs heoffersand their impact on improving performance and achievement in the long jump activity.

1.4.M The importance of the study:

The importance of the study is to apply one of the modern educational means andtoknow the impact of this method in visual feedback through video presentation in order to improve performance and through it athletic achievement to make the student achieve ideal performance, especially when he finishes studying and becomes a professor in the future, which makes it easier for him to work and provide a good model for students.

There are statistically significant differences between the members of the two groups in the two post-measurements in favor of the experimental group.

2. Study terms:

2.1. The definition of feedback:

The definitions of feedback have multiplied with the multiplicity of their patterns and types and have been defined:

linguistically: “FED BACK, feedback or reflective feed” (Bouhaj Sebaa, 2021, 244).

It is defined as"information that shows the difference between the specific performance target and the performed performance." (Ben Amirouche Suleiman and others, 2017, 171).

It is defined in the field of sports education where Piéron,m points out that "feedback is a response to the various motor behaviors ofstudentsand this is through the relationship between the task and the performance required." (Labaan Karim, 2011 AD, pg. 57).

2.1.1. The definition of visual feedback:

- "it is that information that the learner gets after and during the response or performance, such as using the video to display the performance and observing biomechanical errors during the performance."(Hasnaa, Al-Mayahi, 2012, 28).
- "It is the feedback that the learner receives by seeing his recorded behavior, by replaying it via a videotape or via a (CD) tape." (Imad Kanaan, 2014, 71).

Operational definition of feedback: It is that information that the learner receives about the progress of his performance, whether this information is internal, sensory or external, through the various types of feedback, whether at the beginning or end of the motor duty entrusted to him.

2.2. The definition of performance: is a semblance of the learning process, learning is an internal process, and performance is the result of the learning process.

- It is defined as the ideal image of technical performance and the effective way to carry out a particular motor task.
- It is a special system with movements performed at the same time and movements performed sequentially, and this system effectively regulates the mutual influences of the internal and external forces that influence the individual athlete with the aim of exploiting them fully and effectively to achieve the best sports results. (Qassem Hussein Hassan, 1998 AD, p. 42).

The procédural définition of performance: It is the motor duty entrusted to the individual to perform through his capabilities according to a special control system.

2.3. The definition of the long jump:

- "It is working to convert as much power to the body after preparation for running and translating the acquired speed (linear velocity into angle velocity) after take off to throw the body to the farthest possible point forward."(Nayef, 2011, 7).

3. Previous and similar studies:

3.1. the study of Iman Raghdi, 1996 AD:

"The impact of visual feedback through photography, presentation, explanation, and model in learning some volleyball skills."

This study aimed to identify the impact of visual feedback through photography and presentation in learning some volleyball skills.

This study was conducted on a sample of the 40 students of the Faculty of Sports Education at the University of Jordan, who were divided into two groups, an experimental group of 17 students with whom immediate video feedback was used, and a second experimental group of 23 students with whom feedback was used by verbal explanation and model performance. The researcher found that there are statistically significant differences between the pre and post-measurements in favor of the post-measurement for both groups, as well as the presence of statistically significant differences at the level of skill performance in the post-measurement between the two groups and in favor of the experimental group.

3.2. The study of Wissal Al-Rabdi, 1996:

"The impact of visual feedback using educational means on teaching the student breaststroke swimming."

This study aimed to identify the impact of visual feedback using educational means (view a model by video - view the student's performance after filming him on camera)on teaching the student to swim breaststroke and the study was conducted on a sample of students of the Faculty of Sports Education at Yarmouk University, which included 23 students who finished a swimming course and they were divided into two groups, an experimental group that included 12 students, and a traditional group that included 11 students, the method of modern teaching means has been used on the experimental group (Video camera and TV for viewing), and the traditional learning method has been applied on the traditional second group

The results showed significant differences in the post-measurement of time, technique, and breaststroke speed rate between the experimental and traditional groups in favor of the experimental group, and also significant differences were found in the post-measurement of the skill level of breaststroke between the experimental and traditional groups in favor of the experimental group.

Study of afrah Dhanun Younes 2012:

"Feedback in videography manner and its impact on the acquisition of some rhythmic movements with the ball and keeping it ".

The study aimed to identify the significant differences in the post-test between the two research groups in learning some rhythmic movements with the ball and how to keep it, The experimental approach was relied upon to suit the nature of the study. The research community included female students of the Faculty of Sports Education at Mosul University for the academic year (2011/2012) and the sample of the study consisted of (32) female students of the Faculty of Sports Education and the sample members were divided into two groups equal in number by (16) students per group, and by lottery, the experimental and officer groups were selected, After using the videography with the students' performance and presenting it in front of the members of the experimental group as a feedback, and the usual imperative style with the members of the control group for (8) weeks, after which the post-test of the two research groups was conducted to see the degree to which the students acquired some rhythmic movements with the ball, The study found that there are statistically significant differences in the post-test between the two research groups in acquiring some rhythmic movements with the ball for the benefit of the experimental group.

- There are statistically significant differences in the post-test between members of the two groups in keeping some rhythmic movements with the ball and in favor of the experimental group.

3.3. The study of Raed Faeq Abdul-Jabbar, 2006 AD:

"The effect of different timings to display the model according to the most important biomechanical variables in learning the long jump activity for students."

The study aimed to identify the impact of the timings of presenting the model in learning the long jump activity in terms of biomechanical and physical variables, as well as to recognize the best timings in learning the long jump activity for students in terms of biomechanical and physical variables, The researcher used the experimental method with (three totals method) on a sample of the first level students consisting of five people (A, B, C, D, E), and their number is (150) students, Three groups (B, C, E) of 90 students were selected by the sub-method and the researcher excluded a number of sample members, including failed, former, and frequently absent practitioners, therefore, the final number will be (42) students divided into three totals, The researcher used a data dump form of a Sony camera with a frequency of (25 p/s) and also used some tests of achievement and performance. The researcher concluded that the presentation of the model with (beginning, middle, end) timings during the educational curriculum helped the learners to get rid of some major

mechanical errors and improve them, where the focus was on the goal of each part of the movement instead of the movement as a whole.

- The use of model presentation has increased the consistency and stability of the motor performance of the long jump activity for the first group members.

The researcher also recommended the need to use visual means (model presentation) during different periods when learning the long jump activity.

3.4. The study of Muhammad Hassan Abu Al-Tayeb and others 2013 AD:

"The impact of visual and verbal feedback on some kinematic variables in breaststroke swimming."

- The study aimed to identify the impact of visual and verbal feedback on some of the kinematic variables in breaststroke swimming, the researchers used the experimental method on a sample of 20 students from swimming course (2) in the 2012/13 semester divided into two groups of 10 students who received visual feedback, and the second group that received verbal feedback also consisting of (10) students, Two cameras with a frequency of (25 p/s) and "Kenova" computer software were used to perform the kinetic analysis, the research variables consisted of the last 25 m arm strokes, the last 25 m swimming time, the 50 m swimming time, the average number of arm strokes in the first 25 m, and the average number of arm strokes in the last 25 m, The results indicated that visual and verbal feedback based on the kinetic analysis played a role in improving the level of kinematic study variables in the 50m breaststroke swimming among the students of the swimming course (2), And that there are statistically significant differences between the members of the visual and verbal feedback group in improving the variables (total swimming time 50 m and the average speed of breaststroke swimming 50 m) in benefit of the visual feedback group, The researchers have recommended that the results of kinetic analysis should be used to assess students' performance when providing feedback to detect and modify performance weaknesses

II- Applied aspect:

4.1 . The pilot study :

The pilot study was conducted on a sample of (LMD) third-year students in the Department of Physical Education in the long jump field of the municipal stadium in M'sila to find out the different positives and negatives that the researcher may encounter during the main experiment, Where this study was done on a sample of (10) students, who belong to the Department of Physical Education and study in the third year (LMD) athletics specialization, they belong to the study community and do not represent the main sample.

4.2. The temporal and spatial scope of the study:

The temporal scope : The study was conducted in the time period from 5/02/2017 to 07/03/2017

The spatial scope : The study was conducted on third-year (LMD) students specializing in athletics, they studyin the Department of Physical Education and Sports and the Institute of Science and Techniques of Physical and Sports Activities, exactly at the Municipal Sports Complex of the Municipality of M'sila and the Long Jump Field.

4.3. The method used in the study:

- The researcher used the experimental method to suit the nature of the research through the experimental design on two separate samples (experimental and control groups), which depends on the pre and post-measurement of the study members.

4.4. Study population and sample:

The research community included the third-year (LMD) students who study in the Department of Physical Education and the Institute of Science and Techniques of Physical and Sports Activities, Mohamed Boudiaf University in M'sila, The researcher chose the study community in an intended way because the researcher is the teacher of this subject, where the study community consists of (3) study groups studying the specialization of an individual athletics game, the member's number is (60) students spread over on these regiments, Where the researcher chose the research sample of the second and third regiments in an intended way as the main sample, the exploratory study was applied to the third regiment, where the number of members of the exploratory sample was 10 students, The second and third regiments were selected as a main sample

consisting of 40 students selected in the intentional manner, where the researcher excluded 10 students due to the number of absences as well as injuries, where the sample became only 30 students, The study was applied to them after being divided into two groups by lottery into one experimental group and another control group, where each group of 15 students was formed, the experimental group received visual feedback through photography, presentation, explanation and model, while the control sample received the traditional program of the professor.

4.5. Equality and homogeneity of the research sample:

the researcher homogenized the research sample in variables (height, weight and age) and each of the variables about physical caractéristiques, performance and achievement.

4.5.1. The equivalence of the sample members: in the variables of age, weight and height.

Table No. (01) shows the equivalence of the sample members in the anthropometric variables (weight, height, and age) for both the control and experimental samples, where (n-2 = 28)

Variables	Controller		Experimental		degree of freedom	T-value	Significance level	Statistical significance
	A_	B	A_	B	A_	B		
Age (year)	22,80	1,146	22,20	861	28	-1,620	102	insignificant
length (meter)	180,20	5,294	179,86	4,517	28	-,185	,562	insignificant
Weight (kg)	72,26	14,61	71	13,76	28	-,244	,995	insignificant
Significance level at 0.05								

The two research samples have been homologized in the variables of weight, height and age using the T-test, whose values and for all variables showed that there was no significant significance between the members of the two research groups, Where the values of significance level (t) for each of the variables: age, weight, length reached (102), (562), (995) respectively at the degree of freedom (28) and the level of significance (0.05), which indicates the individuals homogeneity of the two samples.

4.5.2. Equality of the two samples in both performance and achievement, as well as some physical characteristics.

Table No. (02) shows the arithmetic averages, standard deviations, the significance level (T)calculatedvalues and the degree of freedom for the individuals of the two research samples in each of the variables (performance, achievement, and some physical attributes). (n-2=28)

V	Variables	measured element	unit of measure	control sample		experimental sample		T-value	Signifi cance
				A_	B	A_	B		
1	Performance	technical performan ce	Degree	4 ,88	,0915	4,90	,0845	,414	,816
2	Achievement	jump distance	meter	3,99	,189	3,97	,170	,354-	,744
3	30m running test from high start	maximum speed	second	4,52	,411	4,51	,435	,065-	,414
4	Sargent test	Muscular ability of the legs	centimeter	2,50	,289	2,58	,137	,911	,522
5	Shuttle (glass) run	agility	second	7,45	,352	7,57	,418	,850	,264
6	broad jump test	muscular strength	meter	2,14	,131	2,18	,156	,708	,347
7	Flex the trunk forward from standing	trunk flexibility	centimeter	4,53	2,41	4,53	1,88	,000	,242

Table No. (02) shows the values of some variables for the purpose of achieving parity between the two research groups in performance, achievement, and some physical attributes, by using the T-test for the significant differences, where its calculated values appeared, as well as the value of its significance in the above-mentioned variables greater than the listed value (0.05), which

shows that there are no significant differences between the members of the two groups, where we note that the significance level for these variables came as follows:
(Performance values 816, achievement value 744, while the values of the physical attributes variables were also greater than the level of significance, where they came: the maximum speed values -414, and the value of the legs muscular ability -522, while the values of agility 264, and the legs muscular strength value -347, and the flexibility of the trunk 242, also its structure is greater than the significance level (0.05), which indicates the equivalence of the members of the two research groups.

4.6. Data collection tools:

4.6.1. Tests and measurements used in the study:

For his study, the researcher used a set of tests and measurements, which we mention as follows:
- The researcher measured the various anthropometric characteristics related to (student weights and lengths) inside the municipal stadium in the hall dedicated to combat games, Whereitmeets the working conditions, in which the researcher also made measurements for different physical tests of some physical elements in order to equalize the members of the two groups, we mention the test and its purpose only.
- broad jump test of stability.
The purpose of the test is to measure the muscular ability of the legs.
- Glass running test.
The purpose of the test: to measure agility.
- 30m sprint test from standing.
The purpose of the test: To measure the maximum speed.
- the vertical test of Sargent.
The purpose of the test is to measure the muscular ability of the legs in the vertical jump.
- Trunk flexion test from standing.
The Purpose of the test: To measure the flexibility of the trunk in forward flexion movements from a standing position.
- All these tests were agreed upon by a group of arbitrators who were given a form from several tests.
- Long jump test: The researcher relied on the legally prescribed test of long jump in the activity of the long jump, where three attempts are given to each student and the best attempt is calculated, which is the distance traveled.
-the form description about the technical performance of the long jump stages:
In his assessment of the technical performance level of the long jump stages among students, the researcher relied on a special form for evaluating the technical performance of the long jump competition, which is specific to the studies of the second level - of the International Federation of Athletics (Regional Development Center, Cairo).

This form contains personal data on the student's name and number in the calling list, where this information was filled out before the start and this form contains four stages that the long jump competition is going through, Each stage included several indicators in addition to the degree that have been awarded if each indicator is achieved, and for the evaluation, the students were given three attempts and an assessment of the best attempt. the following table explains what this form contains.

Table No. (03) shows the content of the navigation form for technical performance in the long jump

Number	Stage	number of indicators	Total scores
1	approach	03	02
2	take off	03	04
3	flight	04	02
4	landing	01	02
	total	11	10

4.7. Psychometric characteristics of the study tools:

Validity of the evaluation form for technical performance:

The validity of the observation card for the technical performance of the long jump stages was confirmed by presenting it to a group of researchers for the purpose of arbitration, knowing that the observation form was prepared by the International Association of Athletics Federations, although it was accepted by all the arbitrators.

A- Stability:

The method of agreement of observers in calculating stability is one of the most commonly used methods because of its ease, where the use of this method requires more than one observer (observant and more) to observe the performance of students, and in order to do so it is necessary to follow a set of conditions during the evaluation process:

- Each assessor professor should sit in a place near the jump field to allow him to view the overall performance of the students.
- Each observer should use the same symbols while taking notes.
- The Observers should start at the same time and finish at the same time.
- in order to calculate the stability, the equation (Cooper) was used where it was agreed with the assistant team on the followed plan in the evaluation and the method of registration, and this process was carried out through an exploratory study on a group of students studying in the third year of the LMD Bachelor's degree in Athletics, Department of Education Physical Education in the Institute of Science and Techniques for Physical and Sports Activities and they belong to the study community, where they numbered (10) students on 10 January 2017.

Table No. (04) shows the values of the researchers' evaluation results:

Stage	Observers	The number of agreement times	The number of difference times	Agreement percentage	Overall average
approach	first	08	2	80%	% 70
	second	06	04	% 60	
take off	first	07	03	% 70	% 75
	second	08	02	% 80	
flight	first	06	04	% 60	% 65
	second	07	03	% 70	
landing	first	07	03	% 70	% 75
	second	08	02	% 80	
total notes					% 71,25

Given the rate of agreement between the researcher and the observers, it turns out to be high, the overall average rate of agreement between the researcher and the observers has reached (71,25%), which is a high percentage, which confirms the stability of the observation network and its validity for application in the main experiment.

- The researcher also measured the stability of the study tools by measuring the stability through testing and re-testing.

Where Table No. (05) shows the correlation coefficients, arithmetic averages, and standard deviations of the performance and achievement variables, where the researcher used the Pearson correlation coefficient.

Variables	first test		second test		Correlation coefficient value	Correlation significance
	A_	B	A	B		
performance	5,100	0,270	5,09	0,202	0,648*	strong correlation
achievement	4,170	0.305	4,160	0,353	0.646*	strong correlation
	Correlation at (0.05) *					

Through Table No. (05), which shows the values of performance and achievement variables in the stability through the application and re-application of the test, we notice a strong correlation where the correlation coefficient in performance reached (*0.648), while the correlation coefficient of achievement reached (*0.646), which is a strong correlation at the Significance level (0.05), which indicates the stability of the study tools.

4.8. Educational Program:

The researcher built the units of the educational program in the long jump activity, based on many studies, some sources and books. a set of exercises was relied on in the long jump activity.
In addition to the experience of the researcher in the field, where the program consists of (8) educational units that have been programmed over the course of a whole month, where the researcher in agreement with the two research groups included an additional class in order to implement the program, which was already done where there were two classes per week (Sunday class, the second class was in official timing on Tuesday morning).
Program objective: The program aims to identify the impact of the educational program based on visual feedback (photographing and presentation) in improving the technical performance of the long jump stages and its relationship to some biomechanical variables in the achievement process.
4.9. The main study: the field research procedures of the study tools:

-the pre-measurement:

The researcher performed the pre-measurement on the experimental and control groups, where the tests have been measured under research on 05/02/2017 according to the specifications and special performance conditions.
-the post-measurement:
The researcher conducted the post-tests according to the same used and followed procedures in the pre-measurement in terms of the field of the jump, as well as all aspects related to measuring tools and cameras, and the appropriate atmosphere on Tuesday 03/07/2017.
4.10. Statistical methods used:

The researcher used the Statistical Package for the Social Sciences (spss), which included the following means and methods:
- arithmetic mean.
- standard deviation.
- the t-test for independent and dependent samples.
- Pearson correlation coefficient.
- Cooper's equation of the compatibility rate.

III- Presentation, analysis and discussion of the results:

This section includes a presentation of the results, analysis and discussion according to the pre and post-tests of the research sample through statistical tables that show the differences between the research groups to know whether the program based on visual feedback or the method of the traditional professor has an impact on upgrading the level of technical and kinetic performance the jump stages, through the answer of study hypotheses which is as follows:

1. First Hypothesis:

- There are statistically significant differences between the pre and post-measurements of the experimental group members in improving performance and achievement for the long jump activity.
Table No. (06) shows the arithmetic averages, standard deviations, and T-value of significant differences between the pre and post-measurements of the experimental sample in the long jump test for performance and achievement scores (n - 1 = 14).

test	pre-measurement		post-measurement		T-value	degree of freedom	T-Significance level
	Arithmetic average	standard deviation	Arithmetic average	standard deviation			
performance	4,900	,0845	5 ,993	,552	-7,973	14	0.000
achievement	3,973	,170	5,046	,159	-16,135		0.000
Significance level at 0.05							

Through Table No. (06), which shows the arithmetic averages, standard deviations, and the T-value of significant differences between the pre and post-measurements of the experimental sample in the technical performance test for the long jump, the arithmetic mean in the pre-measurement reached 4,900 with a standard deviation of .0845, while the arithmetic mean in the post-measurement is 5,993 with a standard deviation of ,552andwith reference to the calculated significance level (T) value, which amounted to (0.000) and comparing it with the significance level (0.05), we find that there are statistically significant differences between these two measurements in

the performance scores in favor of the post-measurement, while the arithmetic mean in the pre-measurement of the achievement variable reached 3,973 with a standard deviation of ,170 And comparing it with the arithmetic mean of the post_measurement, which amounted to 5,046 and a standard deviation of 159, And through the calculated significance level (T) value, which reached (0.000), which is less than 0.05, we see that there are significant differences in favor of the post-measurement, which indicates that the educational program using visual feedback (video presentation - explanation and model) led to an improvement among the members of the experimental group, The researcher attributes the differences in the level of performance and achievement between the pre and post-measurements to what the video presentation provides in addition to watching the ideal performance from the possibility of the learner interpreting his performance and trying to correct this performance by employing the information provided by the video presentation and working on improving it to reach an ideal level of performance, The researcher attributes this improvement in both variables (performance and achievement) of the experimental sample to the impact of the educational program based on visual feedback through educational units that achieve the desired goals and serve the various stages of the long jump, The researcher also attributes this improvement to the critical importance of the feedback received by the sample members (visual feedback through photography and video presentation, in addition to the presentation and model by the professor), where the researcher noted the interaction of the sample members by watching their performance, which is repeated to them each time, In addition to the video presentation of the educational film for the stages of the long jump, which led to the desire and motivation from the students to imitate this performance with the correction of the professor and the exercises included in the educational units that played an important role in refining the physical and skill side of the various stages of the long jump, These results are consistent with the findings of many previous theories and studies, where the behavioral correlative theory emphasized the fact that the individual “changes his behavior when he knows the results of his previous behavior, it also confirms the reinforcement role of feedback (Imad Saleh Abd Al-Haq, 2008, 4), The classical theory also considers that “when internal sensory feedback is available, the requirements of the task will be unclear and the learner does not distinguish between the goal and the required movement, so additional (external) feedback is necessary in order to achieve learning (Wissam Salah, 2012, 364), It also agreed with Salama's statement (1988) that "feedback is related to Thorondike's rule of Impact, Knowing the results of feedback affects learning and providing it to the learner leads to more improvement and stopping it leads to a deterioration in performance (Mourad Hussein, 2003, 18).

The results of this study also coincided with the results of many studies, it coincided with the study of (Iman Al-Raghdi 1996), which found that there are statistically significant differences between the pre and post-measurements in favor of the post-measurement for the experimental sample, while the results of the study of (Dhanun Younes, 2012 AD) were also consistent with this study, where he concluded that there are statistically significant differences between the two measurements in favor of the post-measurement.

Through the findings of the researcher and many studies, there are statistically significant differences between the pre and post-measurements in favor of the post-measurement, therefore, the researcher acknowledges the validity of the first hypothesis.

2. The second hypothesis:

* - There are statistically significant differences between the members of the control group in the pre and post-measurements on improving performance and achievement.

Table No. (07) shows the arithmetic averages, standard deviations, the calculated (t) value and its significance level to calculate the significance differences between the pre and post measurements of the control sample in the long jump test and technical performance scores, (n - 1 = 14).

Tests	pre-measurement		post-measurement		T-value	degree of freedom	T-Significance level
	Arithmetic average	standard deviation	Arithmetic average	standard deviation			
Performance	4,88	,091	5,260	,213	-7,047	14	0.000
achievement	3,99	,189	4,89	,977	15,289 -		0.000
at a significance level of 0.05							

Table No. (07) shows the values of the arithmetic mean, standard deviation and the value (T) of the results of the long jump test through the performance and achievement scores, where the

arithmetic mean of the performance scores reached 4.88 with a standard deviation of 0.091 in the pre-measurement and with comparing it with the arithmetic mean of the post-test where It was 5,260 with a standard deviation of 2,13 and the calculated significance level (T) value for the two tests (0.000) and with comparing it at the significance level (0.05) We note that there are significant differences among the members of the control group in the technical and motor performance test for the stages of the long jump, where the amount of improvement indicated that there were statistically significant differences at the level of (0.000) in the post-test for this group, which is less than (0.05), this show that there are statistically significant differences between the two measurements in favor of the post-measurement of this group, and that what makes the second hypothesis achieved, The researcher attributes this improvement among the members of this group to the impact of the program presented by the researcher to the members of this group, which is based on educational units for the various stages of the long jump activity, as well as some goals that achieve the general goal of improving performance through the explanation and model presented by the professor and some students and without seeing their performance replayed to them again (i.e. without filming or watching shows of a film depicting the performance stages), The researcher also attributes this improvement to the great importance and the role that the teacher plays during the educational lessons in terms of direction and guidance and correction of errors. The researcher also attributes this improvement to the information gained from the students, where they studied this sport in the first year and third year, but they did not practice it in the second year, meaning they have a break in practicing this activity, and the researcher gives credit to the method and technique used in teaching the skill and refine it among students, which led to improvement in performance and achievement, The results of this hypothesis agreed with many studies, as well as what was approved by some theories, where they agreed with Islam's view of feedback in terms of "the coach's intervention as a qualified and skilled expert to correct the trainee's behavior immediately right when the error occurred and guide him to successful responses. Thus the professor is the one who guides the learner and directs his behavior while teaching with the experience" (Youssef Madan, 2006, 67), therefore, it acknowledges the importance of the professor in the educational process, and also it coincided with the study of (Iman Al-Raghdi, 1996), which acknowledged the existence of statistically significant differences between the pre and post-measurements in favor of the post-measurement of the control group members. The results of the study (Dhanun Younes, 2012) also confirmed the improvement of the members of the control group who relied on the traditional method of the professor, in the presence of statistically significant differences between the pre and post-measurements in favor of the post-measurement.

Through the results achieved in Table No. (07) and what has been approved by many studies on the role of the teacher in educational lessons in terms of guidance, direction and correction, the researcher acknowledges the verification of the hypothesis that says (there are statistically significant differences between the pre and post- measurements of the control sample in the performance and achievement test for the long jump).

3. The third hypothesis:

- There are statistically significant differences between the members of the two groups in the two post-measurements and in favor of the experimental group.

Table No. (08) shows the arithmetic averages, standard deviations, T-value, and its significance level to calculate the significance differences between the two post-measurements of the experimental and control samples (n - 2 = 28).

Tests	pre-measurement		post-measurement		T-value	degree of freedom	T-Significance level
	Arithmetic average	standard deviation	Arithmetic average	standard deviation			
Performance	5,26	,213	5,99	,552	4,798	28	0.001
achievement	4,89	,215	5,04	,159	2,215		0.041
at a significance level of 0.05							

We note through Table No. (08) that shows the arithmetic averages, standard deviations, T-value and its significance for the performance and achievement test of the long jump between the post-measurements of the experimental and control sample, and by comparing it with the results of the post-test for the experimental sample, where the arithmetic mean was 5.99 and a standard deviation of 552, while T- significance level value between the two tests was (0.001) and by comparing it at the significance level of 0.05, we note that there are statistically significant differences between the two measurements for the two groups and in favor of the experimental

group in performance scores, Through the results shown in Table No. (08), we note that there are statistically significant differences between the two measurements for the members of the two groups and in favor of the experimental sample in the variable (performance and achievement). The researcher attributes this excellence to the positive impact left by the educational program based on visual feedback in improving the performance of the experimental group members through the educational units of the program in addition to displaying, filming and watching the performancebeingrepeated againin front of the experimental group members, as well as displaying some illustrations and educational video of the long jump stages. The researcher also attributes this improvement to the importance of the video feedback provided to the members of the experimental group in achieving these results, which also strengthened the students' abilities in the process of the wrong performance correction and knowing where the error was and working to correct it by seeing their performance being repeated in front of him again. The researcher also attributes this improvement to the importance of the means of presentation and clarification in the information teaching and gaining time for students to learn the various stages of the long jump activity, as well as the various physical and skill exercises on which the program is built.

The results of this study are in agreement with many studies, as well as some explanatory theories, including:

As stated by the closed circuit theory (Wajih Mahjoub, 2002, 273), "The movements are implemented by comparing the feedback from the body's organs and the corrective reference that the individual learned in advance, which is the sensory effect.", The Spartanic theory also approved "that the concept of feedback is one of the important terms, which meansthe method of information returning to the brain at every stage of motor performance.", In his book Audiovisual Methods in Teaching, Edgardel also acknowledged the order of educational means in a cone that he called "the experience cone" and has classified many means, including (animated films, Presentations, visual graphics.... etc.), The correlative and behavioral theory also approved the reinforcing role of feedback, and that it works to stimulate the learner's motivation and direct his energies towards learning, The media approachalsoacknowledged the feedback "the spread of media and communication has had profound effects in the field of education, adding a new dimension to didactic means, so it took advantage of audio-visual aids and teaching aids, playing a major role in education after its role was limited to reinforcement and clarification (Muhammad Al-Derij, b,s, 68).

The results of this hypothesis are in agreement with many studies that acknowledged the importance of feedback in the educational process and in learning motor skills. The study of (Iman Al-Raghdi, 1996) found that there are statistically significant differences between the two post-measurements of the two samples in favor of the experimental sample, the study of (Al-Rabadi 1996) also concluded that using the feedback method (visual and audio) leads to an increase in the speed of learning technical performance, and it also acknowledged that there were statistically significant differences between the two groups in favor of the experimental sample, While also the study (Faeq Abdul-Jabbar, 2006) concluded that the use of the display of the model has increased the motor performance stability of the jump activity.

through the results of various studies and what was approved by many theories and the results reached by the researcher, he acknowledges the role and importance of feedback in the educational process and the importance of video presentation and watching the learner's performance being repeated, Accordingly, it can be said that the hypothesis that said there are statistically significant differences between the two post- measurements of the two groups' members in favor of the experimental group has been verified.

IV- Conclusion:

- There are statistically significant differences between the pre and post-measurements of the experimental group members in the test of improving technical and motor performance and athletic achievement in favor of the post measurement.
- There are statistically significant differences between the pre and post-measurements among the members of the control group in the test of improving technical and motor performance and athletic achievement in favor of the post-measurement.
- There are statistically significant differences between the two post-measurements between the members of the two groups in the technical and motor performance improvement test in favor of the post-measurement for the experimental sample.

- The educational program based on feedback has an impact on improving the technical and motor performance of the long jump in terms of athletic performance and achievement.
- Feedback has an important and effective role in the educational process in giving the student information about the progress of his work and correcting errors through its use of audio-visual aids.

1. Suggestions:

- Using modern methods and means to teach the long jump activity.
- The application of such a study to other sports and samples.
- The development of programs that are based on the use of technological means in the teaching-learning process.
- The professors should be familiar with the application of media technology, presentation methods and photography in the implementation of the physical education lesson.

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