

# THE EFFECT OF FEEDBACK BY USING OPTICAL MEANS IN SOME VARIABLES BIOMECHANICS AND EFFECTIVELY SHOT PUT FOR BEGINNERS

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## ABSTRACT:

*The importance of research of the mechanical aspects of effective performance shot put by referring to correct postural instantaneously and immediately through Visual observation to match the performance of mechanical conditions that the teacher or tutor , which originally identified the nature of the required information for mechanical event to promote learning for beginners in institutes of physical education for integrates technical performance and the Mechanic, achieving the goal of the educational process. The research aims to identify the level of technical performance and biomechanics variables to effectively shot put to my research. As well as the use of computers as a means for correcting mechanical information to effectively shot put for the experimental group. The influence of the development of mechanical variables for my research. Applied research on randomly chosen sample of students of teachers ' colleges in Waset were 20 students, divided into two officer and pilot, and then the researcher tests tribal, groups and video imaging performance pay, and extracted speed and angle of departure and approach angles and pay, and then apply yours tutorial with visual feedback. and search results have been an evolution in all mechanical variables and the development in the achievement.*

**Keywords:** feedback, optical means, beginners.

## INTRODUCTION

Effectiveness to shot put of the events that consist of many of the technical stages with each other and is supposed to be understood by the operator of the educational process and especially When you teach beginners , since the information on performance can be acquired by observation Visual or the provision of audio information to perform this event and give corrections required when performing .Could this information contributes to the development the mechanical conditions in which performance is supposed to be applied in order to promote and retain learning and results.To achieve The goal of gravity motive is to reach the farthest horizontal distance of gravity Select. Three

key factors to be confirmed, which is the projectile's starting angle. And projectile starting speed .The point at which the projectile kicks off (elevation from the surface of the Earth) ( 1; 10)Since the speed of the starting of the weight is directly proportional to the rate of power passing the center of gravity, the larger the total forces formed the higher the speed and the more achievement of the payment in the right direction (2: 201-202).The angle of gravity begins to play a significant role in determining achievement and affects They are also affected by both the speed of departure and the high starting point (3 : 221). The high starting point of gravity follows in importance the speed of departure and the angle of departure . (4 : 343).

The importance of research has come from the importance of emphasizing the mechanical aspects associated with effective performance. Shooting the put by pointing to correcting the position of the body in real and immediate form through visual observation to match performance according to mechanical conditions. That a teacher or teacher feels, which originally requires recognition of the nature of mechanical information. For this event, in order to promote learning. Here, for beginners in Physical education institutes, technical and mechanical performance is integrated and the goal of the educational process is achieved. As the feedback relates to information that is related to the task to be performed, (5 : 5-6). Item To the types of For dynamic feedback (K.R), Static Feedback: (6;18), and Supported Feedback, Instant and delayed feedback (7: 19). As well as the adoption of all types of feedback on The senses that receive the learner's information for the purpose of modifying his/her performance (8;15)

Often the nutrition that takes place after the completion of the movement, or immediately after completion or after the completion of the performance of the movement or efficiency, because the sooner and faster feedback was better and usually takes the form of information about the result (K R) and information on performance (K P). (9; 20, and can include feedback Information about performance-specific kinematics by emphasizing Height of body mass or angles required to be achieved in different body joints when applying performance (10 : 374), (Teitel Carlton and Antonio 1990) says If a feed is given back to the learner, it should be by watching about the errors. Digital image of the model plus knowledge by viewing. (6:376) It also enables the provision of information by registering the force, measuring the effort, fumbling the required strength and correcting what is required during this effort. (11 : 143), and constantly giving this information can provide the required adjustment, For the mechanics of neuromuscular work and the repetition of good performance compatibility (11: 146)

The current educational process does not emphasize the achievement of mechanical performance conditions or may never be seen, while the researcher sees that in the field of biomechanics it's important to refer to all aspects of mechanics' accompanying the technical performance and emphasizing its role in the integration of technical performances, so seeker wanted to lay the foundations for the use a visual way to help diagnose errors and give the nutrition that specializes in the points to be corrected according to mechanical variables to be presented in the form of corrective information to work to properly master the skills performance and for the student to have the technical information related to the practical application of the practice after graduating properly. And the research objectives, Learn about the level of technical performance and the variables Mechanical for my effectiveness shot put of the search sets. And using the computer as a visual means of correcting The Information the Biomechanical for my effectiveness shot put to for demo Group. Also learn about the impact This means In Development Some of the BIOC variables For the two search groups.

## MATERIALS AND METHODS:

### Field research procedures:

Require Nature of the problem suitability experimental curriculum.

Society and sample Search :Sister Seen Researcher (20) Students from the Institute of Physical Education in West mediators In the intentional manner, and divide them randomly to two groups, experimental and officer, with 10 students per group, as shown in table (1). The sample was represented 11.17% From the original research community of 179 students. and conducted They have a process of homogeneity in terms of height, weight, age and level of eye performance. Noticed Table (1) The researcher conducted parity with, divide the sample into two groups in the performance and achievement variables in the tribal test, as in the table (2).

Table (1) The equable distribution of the research sample is shown by the torsion coefficient of the physical measurements and Achievement Sample Search

Variables	Measurement	M	Median	±SDE	Convolution
Length	meter	1.75	1.77	0.058	-0.202
Age	Year	17.60	17	1.667	1.548
Weight	Kg	67.45	66	7.674	0.448

Table (2) Equality of the two groups in assessing performance and achievement

Variables	Unit of Measure	The Commonwealth		The experimental		Value t Calculate d	Moral level	Indicati on of variance s
		M	± sde	M	± sde			
Performance of extrusion weight	Degr.	9.87	6.91	31.72	2.19	0.962	0.341	Random
Gravity-throwing	m.	8.69	1.05	8.61	.	0.675	0.076	Random

Moral at 18 degrees of freedom and an error level ≤ 0.05

The table (2 ) The equivalence between the two groups after they are divided into the performance assessment and achievement variables using the T test for two separate eyes and the values of (v) below the level of the greater level of error (0.05), which indicates the random differences in these variables. And the was devices, tools ,Laptop Hp Andcd -Photo AndMovies -Fast video camera (210 f/sec) issue/2 (for analysis purpose)-Video cameras (24 f/sec) for registration and display purposes

The researcher gave four unitsInstructional equipment) on how to hold the weight And the firing steps and the throwing process for the thrust of the weight, so that all the testers are at the starting point of one andHad been Number of teaching modules for two weeks and two units per week with the use of models for the avoidance of video exposure to help and definition of demandhaha on the nature of his performance (This Effective Objects).

Finder Technical performance tests by giving three attempts per student and according to international Law and filmed Technical performance of each student for subsequent video presentation for the purpose of evaluation by the relevant experts As well as later on, through the Conovia programme (Kinovea), For the purpose of extracting mechanical variables related to technical performance and measured They are as follows:

- Variable take off velocity: The distance between the center of gravity was measured before leaving the hand of the thrower, with a point of gravity after a moment of flight (eight consecutive images) and the transition time is measured directly from the computer and divide the starting distance over time to extract the speed of departure (m/s).
- Starting angle: measured between Line which represents the starting distance of the tool between the two points of the center of the block before and after starting with the line from the center of the tool block horizontally and parallel to the earth, measured by computer directly (degree)
- Approaching and pushing angles: measured between the line between the center of gravity's body mass at the moment of the throwing position and the final throw between the anchor of the foot and the center of the body's weight.And the prior motor skill test was the technical performance level – digital to pay the weight). The purpose of the test: (measurement of technical performance – digital
- Tools used: Measuring Tape .

- Performance Description: He stands in the firing and back circuit facing the firing sector and then performs a glide and sliding back to the firing position and then throwing and disposing and balancing after paying the weight
- Test instructions: To not touch the ground outside the circle and to not acquire the stop plate and to drop the weight within the firing sector which is 32.94. Each laboratory has three attempts to record the best.
- Registration: The distance from the inner edge of the iron frame is calculated Behind Suspension pad Mar Tape at the center of the circle to the closest effect left by the weight And this is aFor a distance that expresses the numeric level.

The technical performance level evaluation Form is prepared explaining the amount of degree for each stage of the motor performance To push the weight as follows:

- First field: The sequence of testers.
- Field 2: Stage of Tankour 15 degrees
- Field 3: Sliding phase 25 degrees
- Field 4: Firing mode phase and throwing 50 degrees
- Field 5: Installation and balance phase 10 degrees

Laboratory grades were developed for technical performance According to its importance , which is the upper limit of the calendar from (100). Technical performance was performed by teaching staff \*\* In the Faculty of Education Physical and Sports Sciences – The

\* Experts are:

- Prof. Dr.Sareeh Alfadly ;Faculty of Physical Education and Sports Sciences-University of Baghdad (expert in athletics federation.
- Prof. Dr.Mohamed Abdel Hassan = Al Israa University College-Department of Physical Education and Sports Sciences .
- Prof. Dr.Mehdi Kazem Ali = = = = (Expert on athletics Federation.

University of Baghdad, by watching the video recording, which is slow and routine to the level of technical performance of the members of the two groups. The arithmetic circles were then extracted for the sum of the constituent grades.

The prior tests of the experimental and groups were conducted on 19/ 11 /2018

After you know the researcher on the curriculum prepared by the teachers of the first stage of the material of the yard andThe field and the time allotted for the education ofFully effective by the Institute, which is the eight educational units and the time each Alone ninety minutes and two educational units a week .The education unit is divided into three main sections, the Preparatory section (20 minutes), the main section including the educational part, the applied part (60) minutes and the closing section (10 minutes). AndWhat the researcher has done is to photograph and collect the photos and practical study vocabulary for the effectiveness (shot put) as a model and structure to work and adopt accurate and practical sources and transfer them to pictures Of the stages of performance the effectiveness and note this one performance by sample personnel to diagnose technical and mechanical performance errors , and give the necessary corrections and repeat performance, and has been Provide feedback along with performance as well as beyond Registration of sample personnel for enabled from scenes its performance video After you apply the performance. These were blocked views About the police group as had been This is the educational approach to feedback. Had been application of the educational curriculum with two units per week for 8 weeks, i.e. 16 educational units, and feedback was given within the applied section of the Education unit.

The post test was conducting the after-exams on a day21 / 1 /2019 For both experimental and officer research groups, respectively under the same conditions as the prior tests .

**RESULT AND DISCUSSION:**

Table (3)

Results of statistical operations evaluating the technical performance to push the weight and achievement For the search groups

Totals	prior		Post		DER.M	Sde.err E	T Calcula ted	Signit.l evel	The signific ance
	M	S.df	M	S.df					
Experimental performance (degree)	31.72	2.19	51.71	2.17	19.99	3.57	5.60	0.000	Sig.
Accuracy performance (degree)	29.97	6.91	35.04	8.74	5.17	2.76	1.87	0.043	Sig.
Experimental t (m)	8.61	0.98	11.45	0.34	2.84	0.46	6.161	0.000	Sig.
Accuracy achievement (m)	8.69	1.05	9.50	0.95	0.81	0.40	1.992	0.065	n.sig

Moral at the degree of Freedom (9) and the level of error  $\leq (0.05)$

Shown by what is shown in table (3) The values of the level of morale between the tribal and post tests in the evaluation of the technical performance of the weight and achievement for the experimental group and the officer.

Table (4): Statistical processors For the tele exam of performance evaluation scores to push the weight and achievement For the search groups

Totals	Accuracy		Experimental		Value T Calculated	Level of sign.	The significance
	M	S.de	M	S.de			
Push weight (degree)	35.04	8.74	51.71	2.17	6.450	0.002	Sig.
Push weight (m)	9.50	0.95	11.45	0.34	5.75	0.000	sig

Moral at the degree of freedom 18 scientific level  $\leq 0.05$

- View and analyze the results of differences between tribal tests Fingerprinting In variables Mechanical to shot put of the search sets.

Table 5 : Values T (between the tribal and mechanical tests of the mechanics to shot put of the experimental group and the officer

Totals	Gru.	prior		Post		DER. M. <sup>-</sup>	Sde.e r r E	T Calcu lated	Signit.l evel	The signific ance
		M	S.de	M	S.de					
Speed off	Exp.	8.57	0.98	10.65	0.53	2.08	0.64	3.23	0.046	Sig.
	Offi.	8.67	0.94	8.89	0.67	0.22	0.23	0.95	0.861	n.sig
Starting angle	Exp.	29.5	5.7	34.65	3.19	5.15	1.73	2.97	0.031	Sig.
	Offi.	28.70	4.8	30.54	4.3	1.84	1.54	1, 19	0.061	n.sig
Angle based	Exp.	89	6.4	71.6	2.15	17.4	3.51	4.95	0.000	Sig.
	Offi.	91	7.4	88.5	4.8	2.5	1.87	1.33	0.765	n.sig
Push angle	Exp.	87.8	5.4	76.8	1.6	11	2.57	4.27	0.000	Sig.
	Offi.	88, 3	6.9	86.3	3, 8	2	2.94	0.68	0.098	n.sig

Moral at the degree of Freedom (9) and the level of error  $\leq (0.05)$

Shown by what is shown in the table (5) above that the values of the moral level between tribal and pre-trials at the speed of departure . Starting angle , Base angle ,Payment angle For Group For experimental. scientifically at the degree of Freedom (18) and the level of error  $\leq (0.05)$

Table 6: ValuesT Level of morale between the teleassays of mechanical variables pushing the weight of the two search groups

Totals	Officer		Experimental		Value T Calculated	Level of sign. $\bar{M}$	The significance S.de
	M	S.de	M	S.de			
Velocity take off	8.89	0.67	10.65	0.53	3.77	0.002	Sig.
Take off angle	30.54	4.3	34.65	3.19	5.61	0.001	Sig.
Angle based	88.5	4.8	71.6	2.15	4.55	0.000	Sig.
Push angle	86.3	3.8	76.8	1.6	4.91	0.032	Sig.

His analysis in table (3) in the grades of the post-performance evaluation showed that there is a moral difference in learning the artistic performance of the weight and the groups of the experimental and the officer and the back of the development that the mechanical feedback followed by the researcher on the experimental group and the exposure of the group of practical lesson aimed at developing performance within the privacy of these institutes and relying on the progression of skills easy to difficult, the organization of the lesson units and the possibilities available, explanation and presentation,

and increase the repetitive attempts of performance and the investment of time and effort and the feedback used, the group experimental the results showed a clear progress in the evolution of the level of technical performance, and also the apparent impact of the use of additional feedback based on mechanical performance in the process of learning the skill of pushing the weight as an educational medium with the effect of their pain in communicating information and give the learner a sense of movement in following the effectiveness of the skill sequence(12:29).

The understanding and absorption of skills by seeing these skills through slow and normal imaging with emphasis on the overcoming of mechanical and technical errors to influence the correction of motion picture and kinetic action as well as an increase in the factor of suspense and desire to perform through diversification in the educational means(12:79) This is consistent with the assertion by Ellen Wadih, 1987, that the educational medium contributes to the rapid acquisition of motor skills, since by watching the performance exhibiting and in exercising this performance, learners are able to follow and imitate the components of the skill and to perceive their strengths and weaknesses, thereby helping to exclude Erroneous movements and the correct reinforcement in them(13:194). The obvious superiority in the performance of pupils no the pilot group is also due to the use of teaching aids in the presentation of skills and the images contained in it, as well as the slow presentation of the talent that helped to detect and diagnose the error and confirm the correction, which helped in the development of accurate compatibility of the skill and then accelerate the process of acquiring the skill By focusing on the chain of skill, the presentation of skills "has a significant impact on the development of strict compatibility in conformity with the commentary and clarification"(14:78). And then to improve the digital level this is consistent with what Jamal Imam pointed out in his study that the use of educational means (audiovisual) led to the clarity of vision of the learner when dealing with the movement, which led to the improvement of the digital level and the level of performance skills(15:118).

Note from table (6) above are the existence of moral differences in favour of the pilot group's teleassays in these variables. that the training the practical The members of this group have been allowed to follow the correct performance of the movement of the trunk and arm and within the appropriate kinetic path and in the flow sequence which gives the right kinetic momentum for these parts to get the right speed to be transferred to Weight (as one of the principles of keeping momentum) Have To be achieved along the lines The correct, Thus, it has achievedC. Mechanical Feedback That Applied The Finder Members of this group are intended. In the velocity variable and angle take off put , so the characteristics of kinetic performance have been considered so that the sample members can choose

Performance As well as putting the psychological characteristics into consideration(16:254). AndThe researcher concludes from the foregoing that the factors associated with the performance instructions contained in feedback that has been applied to The experimental group, has achieved a significant impact in the development of speed and the angle of the take off .As well as taking the right angles for performance when basing and pushing in line with the goal of performance For the members of this group in the Teleexam and much better than the officers of the officer group, where some studies indicated that feedback direct are very impressive when companion legitimization for skill training for what it contains vocabulary to develop a sense of movement and timing(17:67-68). The researcher finds that improvement in skill performance has gave an improvement in the variable Speed of departure Gravity and a starting angle fit with this speed When Final shot put stage performance of the experimental group compared to the officer set, which means that approach training include corrections to paths and body conditions and confirmation that the wrong conditions are definitely corrected by giving corrective information or by diagnosing it through the display screen and emphasize vocabulary This performance It was his job to improve the interior image of the speed-off variable. By achieving the angles of the base by reducing it to increase the way of acceleration of gravity and prolong the center of the body weight moment of payment to follow the path of gravity, which made the paths of body parts printed In the nervous system which gave the experimental group the advantage in this variable at , and this view is consistent with the results of some studies18 105-108).And that's what agree with (Bromley, 1993) that the influence of the internal model and the simplified training in the guidance of trainees can develop their skills and self-confidence(19:87).

#### Conclusions:

- The feedback approach of information Kinematics has been effective and influential in achieving digital level
- Evolved All of speed and starting angle to shot put .
- Significant improvement in their technical performance.

- The development of a sense of proper physical conditions of the body in the experimental group, which indicates the correct muscular response of working muscles on the joints of the corners of the shoulder, elbow and torso.

#### Endorsement:

- Circulating the feed-back vocabulary accompanying the kinematics appearances on the working coachesN In the field of training and teachers in the teaching process .

- The vocabulary of this curriculum can be applied to other games, especially those with closed skills, to develop skills using feedback based on kinematics.

- Attention and emphasis of trainers on the use of analysis Motor To get the best possible results.

- Conduct similar research that is concerned with the practical training accompanying the Kinematics appearances on an advanced group of players.

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