

Training of upgrading on a special platform and its impact on the special force and some starting variables and the completion of the long jump for young women

¹Dr. Intisar Mezher Saddam

Abstract

The success in the performance of horizontal jumping depends on mastering an appropriate and suitable approaching run to achieve the highest possible speed. Achieve a good flight path with a suitable starting angle and maintain body balance and fast shooting. This is related to the development of explosive force and this study came in the development of the advancement of the long jump of young women, through the adoption of a proposed upgrading platform that can be applied up lift and pushed the researcher used the experimental method in the manner of (equal groups) and applied research sample was selected from and prove the jump center of talent and the researcher prepared special exercises on the proposed platform jumping on the experimental group was carried out for 8 weeks and by two units weekly so the number of training units (16) training units, and was gradually loaded training by 1:3 in order to be training effective and active based on scientific foundations. The severity was determined according to the cut time and the physical effort was done separately. The researcher concluded that the exercises in the proposed platform influenced the improvement of the values of approach speed and the speed of starting at the moment of upgrading, as well as contributed to the change of the model of movement in the stage of increasing the height of the center of gravity of the body and the angle of starting at the moment of upgrading.

Keywords: Platform, long jump, young women

1 . 1-1 Introduction and the importance of research

The long jump consists of major interconnected stages with each other, and these stages begin with the run of approaching, then the preparation for the upgrading then the effective push and then the flight and landing, and these stages form the correct technical performance if they are connected to serve the purpose of this event. The idea of research came in that there is a direct effect on the values of explosive force at the moment of upgrading, which necessitates the hopper to exert the highest force in the least possible time in order to implement the effective upgrading after the correct connection to the last approach steps, and this means that the hopper must be characterized by the highest speed in approaching and the correct connection between the approaching and upgrading (the final push moment) on the basis that the increase in speed is at the expense of decreasing the angle of upgrading and this generates weakness in the achievement of the high jump at the moment of upgrading. Success in the performance of horizontal jumping depends on mastering correct and appropriate approaching run to achieve the highest possible speed. Achieve a good flight path with a suitable starting angle and maintain body balance and fast shooting. This is associated with the development of the explosive force produced by the muscle or a one-time muscle group which is associated with the increase in the speed of contraction aimed at increasing

¹ Al-Mustansiriyah University/Faculty of Physical Education and Sports Sciences entsarmz@yahoo.com

the speed of the body, which prepares to apply the most important biomechanical conditions, as the loss of the least amount of speed when upgrading and achieving speed in the right vertical direction at the moment of upgrading at the lowest possible time with the launch speed and the starting angle is suitable for achieving the horizontal and vertical distance of the projectile. This study came to examine the real goal of approaching and upgrading in the long jump of young women and the deep analysis of their components by studying the points of instantaneous propulsion during the touch of the foot with the ground at the end of the approaching run and the great importance it poses. And the training methods that can develop explosive force that help to develop this moment in order to enhance performance and achieve good achievement.

1-2 Search Problem

The results showed that the local level of young women with long jump away from the international level in this event, and that this requires workers to prepare training programs to train special physical abilities according to the results achieved to narrow the gap between global and Iraqi achievements. This prompted the researcher to study and research to contribute to the development of one of the important skills of jumping events in athletics, which is the effectiveness of the long jump for young women, through the adoption of means to break the usual training pattern when applying technical performance and specifically when linking the end of approach and effective upgrading and what should be achieved is the consistency between the last step of approaching and the moment of push. There are many biomechanical variables associated with power propulsion, which is one of the most influential variables in achieving good performance of this skill (e.g. maintaining inertia, push time and efficiency.) To the number of other variables that need careful analysis and correct diagnosis in order to overcome this matter in the emerging players and achieve the goal of performance, and has not previously worked a careful analysis of this stage in order to identify mistakes and prepare trainings that help to master the correct connection

between approach and effective instantaneous propulsion, using means as a proposed triangular upgrading platform can be applied upgrading and pushed from both sides and the event of a state of adaptation.

1-3 Search Goals

-Identify some variables of instantaneous propulsion and the speed of the last step of upgrading of the skill of shooting by jumping the handball through the dynamic analysis.

-Prepare exercises using multiple triangular platforms with opposite faces to apply instantaneous and rapid propulsion movements.

-To identify the effect of these exercises on the variables of the explosive force and some biomechanical variables for the starting of the research sample.

. Final moment left the ground-

Research Hypotheses 1-4

There are statistically significant differences between pre-tests and posttests of instantaneous propulsion values and some physical abilities accomplished for the two research groups.

1-5 Research Areas

Human: Players of the National Center for Sports talent of force plays for emerging women athletics.

Temporal: 1/8 to 1/10/2018-

Spatial: Athletics Center Stadium for Talent - Ministry of Youth and Sports.

-Research methodology and field procedures;2

2-1 Research methodology: The researcher used the experimental method in the style of (equal groups)

2-2 Research Sample: The sample of the research was selected in the intentional manner intended 12 of the and prove the long jump of the category of young women players of the specialized center of the Ministry of Youth. According to the achievements of the sample, the sample was divided into two groups, one control group and the other experimental, and the researcher conducted the principle of equivalence on them.

Table(1)

Equivalence between the two groups of research into physical variables and achievement

significance	Error level	Calculated (T)	Experiment		control		Variables
			±A	C-	±A	C-	
Non-significant	0.076	0.192	161.92	905	142.42	887.33	Explosive
Non-significant	0.921	0.967	0.055	1.21	0.08	1.25	10 M
Non-significant	0.067	1.21	0.25	6.23	0.35	6.18	Achievement

It should be noted that all (T) values were below the error level greater than (0.05), which indicated that there were no moral differences between the results of both groups, which means that the members of the two groups were equal under the degree of freedom (10)

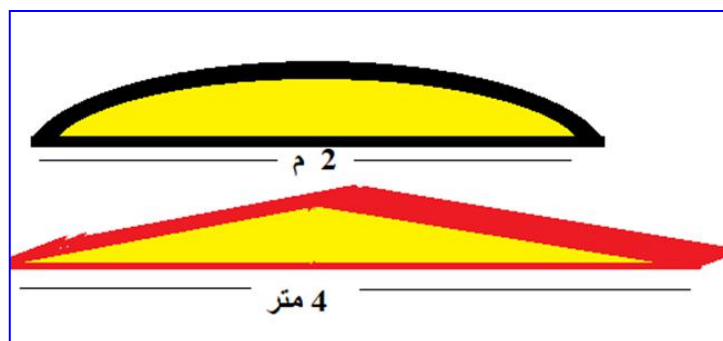
2-3 Search tools and used devices.

Arab and foreign sources and references. Observation, experiment, interview with skill men, competence in field of training science and Bio-Mechanics, tests and measures, foot scan device, modern video camera (speed 2410/image/second number (1). Medical balance for measuring weight, Special software For dynamic analysis(kinovia)

Electronic stopwatch. . Triangular wooden jumping platform with two faces and other convex (note the figure)

Fig. 1 Proposed
2-4 Field

including
used
-Imaging video
from it
-Sample
upgrading with
measure the



Jumping Platform

search procedures:
imaging procedures, tests and
measurements as follows;
of the variables extracted

imaging at the moment of
another camera in order to
following variables

1-Height of the center of gravity of the body at the moment of propulsion: the vertical distance confined between the anchor point (foot of the anchor man) the moment the elevation plate is left and between the point of the hip joint (horizontal line passed by) measured in meters (through analysis)

2-Starting angle: it is the corner between the line connecting from the center of the hip joint the moment of left the board to the same center after leaving the board with the horizontal line passing horizontally in the center of the hip and the measurement is made from the front.

3-The speed of the last step: the distance of the last step (the distance between the right foot of the man in the last step and the left foot of the man when placed on the board) and measured and the time taken, and then divided the distance over time.

4-Starting Speed: Measuring the instantaneous starting distance, which is the distance between the hip point and the point of transmission, was measured after a moment after leaving the elevation plate, measuring its time, and extracting the starting speed from the starting distance division over its time. The measurement was done directly through the analysis

Physical variables include;2.4.1

The ran test the last 10 meter in approaching (for skill) -

-The goal of the test: to measure the speed of the skill of the approach .

-Tools: Stopwatch, measurement bar, long jump approach field with a starting line and a line to the end, the distance between them (30 m) first start line and a second starting line (20 m) from the first line, end line (30 m) from the first line and (10 m) from the second line, video camera, tripod.

Performance Specifications

-The test begins with each tested person taking standby position for the test behind the first line.
-When the permission is given to start (start signal), the tested person runs at an upward speed to reach its maximum at the second starting line

- Allocation observer to each tested person to take his place at the second starting line, and the observer stands with one of his arms in front of his torso, and when he cuts the competition of the second starting line by lowering his arms down quickly as the timer turns the watch with this signal.

When the tested person cuts the line of the upgrade board, the timer turns off the watch, and calculates the time it took by the tested person between the signal given by the observer and the moment the upgrade board passes.

Registration: Time is recorded to the nearest 100/1 of the second – and calculated for the tested person the best time to score in both attempts, then also extract time through the program (kinovea)

Long jump test of stability -

The purpose of the test: to measure horizontal explosive force

Tools and supplies: long jump hole, foot scan device

Description of performance: The tested person stands on a board (foot scan) near the edge of the long jump hole so that the feet are comfortably apart, the tested person bends its knee and bends with his torso forward with weighted hands (behind, in front) and then jump in front to reach the farthest point distance by exerting maximum strength.

Registration: measuring the explosive force of the power platform and after the jump is completed by a foot scan, each tested person is given three attempts and the best is calculated between them by force.

2-5 Exploratory experiment: The researcher conducted the exploratory experiment on a sample of (2) players on 1/8/2018 and the aim was to understand and absorb the players the vocabulary of the tests, and the time it takes to carry out the tests.

2-6 Tests and Pre-Photography: The researcher conducted pre- tests on Tuesday at 4 p.m. on 5/7/2018 on the stadiums of the Faculty of Physical Education in Al-Jadriya, and the camera was installed on the points that were limited to the exploratory experiment in terms of dimensions and the heights are as follows;

The camera is fixed at a point 10 meters from the upgrading board of the left side, with its lens vertical in the middle of the upgrading board and 0.91 meters above the ground.

2-7 Exercises used: The researcher prepared special exercises on the proposed jumping platform on the experimental group. The intensity of each method was identified according to the following;

-Running exercises Applied for a few distance and then upgrading on the jumping platform and on the rising face of it, and then conducting the same training to be upgraded on the descending face from it as well as the procedure of jumping in place on one of the faces and then moving to the other destination by both legs, and then the performance jumped the exchange of the legs on the sides of the faces of the platform, make the partridge up and down with one leg and switch on the other leg. These exercises were carried out within the main section of the training unit and lasted from (30-35 minutes) and were given these exercises as a complementary part of the technical performance training, was carried out for 8 weeks and two units weekly, thus the number of training units (16) training units, and was gradually carried training at 1:3 in order to be effective and effective training based on scientific foundations. The severity is determined according to the time of the maximum time for a physical effort done separately.

2-8 Posttests: The researcher conducted the posttests according to the points used in pretest in terms of location, climatic conditions, measuring tools and cameras, on 1/10/2018

9-Statistical means: The researcher used the statistical bag (SPSS)

3- Presenting, analyzing and discussing the results.

3-1 Presentation, analysis and discussion of the results of physical tests and achievement

Table (2)(

Differences between pretest and posttests of the physical variables of both groups.

Significant differences	Error level	Calculated value of T	AH	f	posttest		pretest		Domain	Measure unit	Variables
					A±	S ²	A±	S ²			
Significant	0.001	7.121	29.63	211	161.87	1116	161.92	905	T	newton	Explosive
Non-Significant	0.137	2.123	2.67	5.67	141.14	893	142.42	887.33	D		

Significant	0.000	4.24	0.0094	0.04	0.042	1.17	0.055	1.21	T	m/s	10 m
Non-Significant	0.101	0.651	0.0154	0.01	0.07	1.24	0.08	1.25	D		

Degree of freedom (5) and below error level ≤ 0.05

It appears that the results of the experimental group in the variables of explosive force and speed special effects of the exercises applied to it using the proposed jumping platform, and training under these conditions was one of the auxiliary training techniques that shed some kind of external resistance to the various working muscle groups to help in moving the body unwell to develop speed and increase the development of instantaneous force or special speed that is associated with the speed of high jump, and increase the neuromuscular compatibility within the muscle and between a muscular group and another muscle group. The researcher believes that the application of various exercises and specific skill type and according to their technical stages, and the emphasis on the development of the most important physical abilities through this training gives a reference to the importance of new and effective exercises applied to members of the experimental group which contributed to improving the speed of members of this group. Therefore, it has emerged that these exercises have been influential in the development of qualitative development in the potential of the members of the physical experimental group in terms of the development of the explosive force required and the basic for the long jump as well as the development of special speed, as these abilities play the largest percentage in achieving achievement for jump players.

The results of the physical posttests between the two research groups were as follows;

Table (3)

Above the physical variables and values (T) between the posttests of the two research groups

significance	Error level	Calculated value of (T)	control		Experimental		Measure unit	Test
			A	S	A	S		
significant	0.049	2.54	141.14	893	161.87	1116	Newton	Explosive
significant	0.019	7.12	0.03	1.24	0.02	1.17	M/S	M 10

Degree of freedom (10) and below the error level $\leq (0.05)$

The results of the differences mentioned in the above table clearly indicated that when comparing the results of the experimental group with the results of the control group in physical variables, the exercises applied to the members of the experimental group were effective and effective in the development of the qualitative and rapid development of the capabilities of explosive forces and special speed and clearly a significant difference from the results of the control group.

+

Lilyard 2007 indicated that coaches should look for athletes who have the ability to run well, regular, high running speed, starting power and natural flexibility.(

The methods used by the researcher in developing these abilities for members of the experimental group contributed to the mobilization of muscle cells, which makes a large number of neurons work and changes the timings of nerve signals going to the related muscles.

Table (4)(

Arithmetical means , standard deviations and differences between pretests and posttests for achievement tests for both groups

Significant differences	Error level	Calculated value of (T)	AF	F	posttest		Pretest		group	measure	Variables
					A±	S	A±	S			
Significant	0.003	4.12	0.083	0.34	0.05	4.57	0.12	4.23	T	Measure	Achievement
non-Significant	0.051	2.28	0.017	0.04	0.20	4.22	0.15	4.18	D		

The results of the experimental group in achievement influences the exercises applied to them as training under these conditions is one of the training techniques help to appear a kind of external resistance to different working muscle groups to help move the body unwell to develop strength push and increase in this development, since the use of low

levels of resistance with high speed limits is the best way to develop instantaneous force or special rapid force that is related to the type of skill and contributes to help increase the mobilization and stimulation of muscle fibers to participate in muscle work, increase its neuromuscular compatibility within the muscle and between a muscular group and another muscular group. and high ability to generate effective contraction power at the moment of upgrading , as well as to achieve significant instantaneous propulsion, in proportional amounts between horizontal and vertical force at the moment of propulsion, or the ability to use explosive force to achieve the high final speed of the production of vertical lift and very good harmony.

4-2 Presentation, analysis and discussion of the results of biomechanical tests; Table 5 , the differences and (T) values of pretests and posttests for biomechanical variables of two groups of research

The results showed the effectiveness of training on the jumping platform in improving these variables, if the goal of these exercises is to develop the speed of approach and the speed of starting in a way that ensures that the motor paths and other mechanical conditions contribute to the performance of this event, which plays a key role in Achieving the right distance.1 The researcher believes that the development in the speed of the last step and the speed of starting came in harmony with the exposure of the members of the experimental group of auxiliary stimulated the working muscles to shrink and expansion more

than its real capacity according to the very high run of short approach which is the arrival of the player to the point of pushing at the maximum speed It's possible.

If it was important to focus on the speed of approach and control, and at the maximum speed so that the player at the end can carry out a successful advancement 1), as well as there was a development in the height and the starting angle, as the exercises of the proposed platform helped to achieve the integration between the height of the body's center of gravity and the starting angle during the moment of upgrading .

Table (6)

Differences between the posttests of the two research groups in biomechanical variables

	Significance	Error level	Calculated value of (T)	AF	F	control		Experimental		Measure unit	Test	
						S	S	A	S			
	Significant	0.000	9.5			0.26	4.77	0.22	5.01	M/S	The last speed	
	Significant	0.000	5.73			0.17	5.80	0.063	8.935	M/S	Starting speed	
	Significant	0.000	3.64			0.05	0.91	0.033	1.008	M	Middle speed	
	Significant	0.034	2.98			1.77	17.8	1.91	19	Minute	Starting angle	
significant	0.000	4.85	0.051	0.252	0.15	5.01	0.22	4.756	T			
non-Significant	0.055	2.03	0.024	0.05	0.26	4.77	0.23	4.68	D	M/S	Last speed	pace
significant	0.000	3.98	0.28	1.135	0.063	8.935	0.12	7.80	T	M/S	Starting speed	
non-Significant	0.068	0.19	0.52	0.10	0.17	5.80	0.107	5.70	D			
significant	0.000	3.44	0.016	0.055	0.033	1.008	0.034	0.953	T	D	AMTH G Anchor point	
non-Significant	0.071	0.129	0.077	0.01	0.05	0.91	0.052	0.90	D			
significant	0.002	5.031	0.431	2.17	1.91	19	1.95	16.83	T	D	Starting angle	
non-Significant	0.137	1.818	0.44	0.8	1.77	17.8	2	17	D			

Degree of freedom (10) and below the error level $\geq(0.05$

It is noted that the average speed of players for members of the experimental and control groups before and after the start of the pretests has given a clear idea of the nature of the performance at this moment and can prove that the great importance of sustaining the flow in a balanced and continuous way during these two important stages, which appeared ,clear that it developed for members of the experimental group as a result of their application of special exercises compared to the results of the control group. This shows the effectiveness of the exercises in affecting on the muscles of the leg on the performance of the stage of decentralized contraction preceded by the stage of positive diastolic in the muscle, which works to load or stimulate the muscle for central contraction, as the special exercises have achieved the goal of developing the final speed and the speed of starting from the codified repetitions and progress in carrying the training gradually in order to enhance the technical aspects, especially at the moment of departure for the members of the experimental group compared to the control group . The results of the study confirm the study result of (Tellis and James 2000) in the case that the placement of the of the upgrading with flat state in front of the body directly will result in maximum lifting force.

-Conclusions and Recommendations 5

5-1 Conclusions

- Exercises on the proposed platform have improved the values of approach speed and starting speed at the moment of upgrading.
- The exercises contributed to the change in the motion model in the stage of increasing the height of the body's center of gravity and the starting angle of the moment of upgrading .
- The proposed platform exercises have achieved the development of explosive force and special speed.
- The exercises ensured the development of the achievement with the long jump and its improvement

Recommendations5.2

- The use of auxiliary tools should be emphasized when training the connection between approaching and upgrading the long jump within the limits (players' abilities)
- Jumping training can only ensure that platform connection time is shortened.
- It should be emphasized that the time of connection to the land is shortened when developing instantaneous propulsion in cases of anchoring and pushing, whether by approach or at the moment of upgrading
- Tools for assistance should allow movement as much as possible with the required time models
- Ensure that the excitability events are above maximum, which occurs when a high level of compatibility is available to be effective and can therefore be used as an assistant in special exercises.

Appendix 1

Some applied exercises

Rest	Repetition	Intensity	Details	S/N
10 :1 10 :1	4 3	10 for each leg 10	- Walk with one man on the platform up and then jump -two steps ran up and then up on the oblique surface down	Saturday
10 :1 10 :1	2 4	10 10	Upgrade from the run approaching 6 m on the platform upwards -Side jumping to the right, right, right, exchange, on my face	Wednesday

References

- , physiology of sport training, -Abu Ala Ahmed Abdel Fattah1
Arab thought house ,cairo,1997.
- 2-Bastweissi Ahmed: Foundations and Theories of Sports Training, Cairo, Arab Thought House, 1999.
- 3- Dare, B& Keatney.B: Speed training ,Track Coach (103),1988.
- 4- Dantman,G,B;Ward ,R,D & Tellez,T: Sports speed (2nd edition) Champaign,El.Human Kinetics,1998.
- 5-Dintiman,G,B;Ward,R,D&Tellez,T:Sports speed(3rd) Champaign. III.Human Kinetics.2003
- 6- Hay,j.:Miller,j.& Canterna,R:The Techniques of elite male Long Jumpers. international Journal of Biomechanics,1986.
- 7- Hay G.J. and et al. : Technique used in the transition from approach to take off in long jump. International Journal of sport biomechanics, 1985.
- 8- Leiyard,H.I: Science of sport training ,How to plan and control training for peak performance .Island Pond.VT:Stadion Publishing Company. 2001.
- 9-Muhannad Hussein Al-Bashtawi and Ahmed Ibrahim Al Khawaja: Principles of Sports Training, 1st edition , Amman, Wael Publishing and Printing House, 2006
- 10-Mohammed Kadhim Khalaf al-Rubaie, A training curriculum based on energy systems and its impact on the development of some physical abilities, biochemical indicators and the neuromotor transition process in volleyball players, Doctoral Thesis, Faculty of Sports Education, University of Baghdad, 2005.
- 11-Mohamed Sobhi Hassanein; previous source. Part 1.3rd edition : Cairo, Arab Thought House, 1995
- 12- Mouchbahani,R& el at :pulley systems in sport training .Modern Athlete and Coach . 42(3)2004
- .Otuson.J. Sprinting alafint and track technique, 1976 13-
- 14- Pross, J, Gradfwnts and their usage in V.Gambettes . Track technique annual, Los Altos: Tafnews, 1983
- 15-Sayyid Abdel Maksoud; Sport training theories- training and force physiology, Cairo, Book Publishing Center, 1997
- 16-Sareeh Abdul Karim Al Fadhli and Wahbi Alwan al-Bayati: Bio-mechanical Biologic Sports, 1st edition , Al-Ghadeer Company, Baghdad, 2012
- 17-Sareeh Abdul Karim Al Fadhli: The force was measured by mechanical laws and compared to the results of technical devices. Research at the 18th International Scientific Conference for Young People and the 18th for Faculties of Physical Education, Mosul University - Faculty of Physical Education – 2012.
- 18-Talha Hussein Hussam al-Din: Biomechanics, Theoretical and Applied Foundations, Cairo, Arab Thought House 1993