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A Suggested Training Curriculum and Its Effect on Some Kinematic Variables and Achievement of the Throwing Stage of the Discus Throwing Event

Hussein Mohsen Saadoun, Dr. Haider Sobeih Najam,
Zahraa Khaled Abdul Wahid and Muhammad Hussein Hamidi

Abstract--- *The research aims to prepare proposed exercises and identify the effect of the proposed training approach to develop some of the mechanical variables for the stage of discus throwing and completion. The fields of research consisted of the human field for the players of the Specialized School to nurture the sporting talent for arena and field games in Maysan Governorate for ages from (14-16 years) to the discus throwing event for the sports year 2020 and the temporal field for the period from 11/16/2019 to 31/31 2020 and the spatial field Maysan Stadium Olympic .Scientific method the researchers used the experimental approach to solve the research problem. Society and sample of the research Choose the research community in the deliberate manner that represented the players of the specialized school to nurture the sporting talent for the arena and field games in Maysan Governorate for ages from (14-16 years) to the discus throwing event for the sports year 2020 AD Their number is (10) players and the number of the sample was (8) players. They were divided into two groups (4) control players (4) experimental players, and two players were excluded due to conducting the reconnaissance experiment on them, and they formed (80%) of the original community. Either the most important conclusions the proposed training curriculum had a clear effect on the variable starting speed of the disc. The most important recommendations, the researchers recommend to Iraqi trainers to rely on effective and modern training methods and to include them in training programs and the need to emphasize the development of kinematic variables during the training of the effectiveness of discus throwing.*

Keywords--- *Physical, Skill, Planning, Psychological and Mental Aspects*

I. INTRODUCTION AND IMPORTANCE OF RESEARCH

Sports games receive wide and broad attention by the countries of the world in order to reach high levels of performance, and in order to achieve the best sporting achievements and in various sports, constant attention has been taken as a "great" space that has made sport always move towards progress and achieving great achievements, and that Through the proper and codified preparation of players in various physical, skill, planning, psychological and mental aspects, with the optimal utilization of related sciences such as biomechanics, tests, measurement,

Hussein Mohsen Saadoun, Faculty of Physical Education and Sports Science, University of Maysan, Iraq.
E-mail: hosen@uomisan.edu.iq
Dr. Haider Sobeih Najam, Asso. Prof., Faculty of Physical Education and Sports Science, University of Maysan, Iraq.
E-mail: haider@uomisan.edu.iq
Zahraa Khaled Abdul Wahid ,Faculty of Physical Education and Sports Science, University of Maysan, Iraq.
E-mail: Zahraakalid@uomisan.edu.iq
Muhammad Hussein Hamidi, Prof., Faculty of Physical Education and Sports Science, University of Maysan, Iraq.
E-mail: Mohmeed@uomisan.edu.iq

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physiology ... etc.

Biomechanical science is one of the sciences that contributed to the scientific progress of the motor performance of man in general and athletic in particular, and that the main content of this science in the field of physical education is to study the causes of movement, i.e. interested in internal and external forces causing the movement and provide the most appropriate motor solutions using the motor analysis that forms Hypotheses and preliminary introductions of scientific relevance to rationalizing sports training for various sporting events, especially arena and field events

The throwing event is one of the distinguished athletics activities in the difficulty in terms of performance and training depends on many biomechanical and physical variables in order to achieve the achievement, which necessitates research and continuously in detecting these variables and studying them theoretically and practically to diagnose weakness in performance and thus allowed the possibility of applying the correct performance at a level High technician commensurate with the nature of the movement for this difficult event.

Therefore, the development of a proposed training curriculum may contribute to the development of achievement in the effectiveness of discus throwing, by emphasizing some kinematic variables in order to advance the achievement and hence the importance of research.

Research Problem:

For the researchers' experience in the field of arena and field games, and thorough follow-up and participation in local tournaments, it was noted that there was a decline in the achievement of the discus throwing event, which prompted the researchers to design a proposed training curriculum in order to upgrade the level of the chemical variables that researchers seek to achieve in order to raise the level of achievement of this event in an attempt to deliver them to the Arab and Asian levels**.**

Research Objectives

2- Preparing suggested exercises.

3- Knowing the effect of the proposed training curriculum to develop some kinematic variables for the stage of discus throwing and completion.

Research Imposition

1- There is an effect of the proposed exercises on some of the kinematic variables and achievement.

2- There is a significant difference in the development of some kinematic variables and achievement in favor of dimensional tests.

Research Fields

The human field: Players of the Specialized School for Sponsorship of Sports Talent for Arena and Field Games in Maysan Governorate for ages (14-16 years) for the discus throwing event for the sports year 2020.

Timeline: For the period from 11/16/2019 - 31/1/2020

Spatial domain: Maysan Olympic Stadium

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Research methodology and field procedures

II. RESEARCH METHODOLOGY

The researchers used the experimental approach to solve the research problem.

Research Society and Sample

The research community was chosen in the deliberate way that represented the players of the Specialized School to nurture the sports talent for the arena and field games in Maysan Governorate for ages from (14 - 16 years) to the discus throwing event for the sports year 2020 AD, whose number is (10) players. Two players were excluded because of the piloting experiment (80%) of the original community, and the researchers divided them into two groups (4) players, an experimental group (4), a randomized control group, and each player was given six attempts. The researchers also made parity between the members of the two research groups in variables. Search (age, height, weight, Achievement, starting speed, starting angle, starting height, using (T) for independent samples.

Table 1: Shows the Equivalence of the Sample in the Research Variables

Variables	**Control group**		**Experimental group**		**ValuesT Calculated**	**ValuesT Calculated**	**indication**
Exams	**Q**	**A**	**Q**	**A**			
Age (years)	15.25	0.78	15.5	0.59	1,17	2,02	Not significant
Height (cm)	159.45	2.17	1 16	3.28	94 .0		Not significant
Weight kg	63.00	4.33	4.4 3 6	4.59	44 .0		Not significant
Achievement (m)	34.43	2.16	48 . 34	3.75	1,00		Not significant
Starting speed m/s	15 .15	2 4 . 1	30. 5 1	13 . 1	40 .0		Not significant
Degree of starting angle	84. 32	46. 3	61. 32	50. 3	66 .0		Not significant
The starting point height is meters	6 3 .1	1.02	31 .1	22 .1	1,87		Not significant

Table 2: Shows the Homogeneity of the Sample in the Research Variables

Variables	**Control group**		**Experimental group**		**ValuesT Calculated**	**indication**
Exams	**Q**	**A**	**Q**	**A**		
Age (years)	15.25	0.78	15.5	0.59	2 1.0	2 1.0
Height (cm)	159.45	2.17	161	3.28	6 1.0	6 1.0
Weight kg	63.00	4.33	63.4	4.59	4 1.0	4 1.0
Achievement (m)	34.43	2.16	34.48	3.75	09 .1	09 .1
Starting speed m/s	15 .15	2 4 . 1	30. 5 1	13 . 1	08 .1	08 .1
Degree of starting angle	84. 32	46. 3	61. 32	50. 3	1 1.0	1 1.0
The starting point height is meters	6 3 .1	1.02	31 .1	22 .1	10 .1	10 .1

Means of information collection:

- Tests and measurements.

Computer applications and software

- Arab and foreign scientific references.

Devices and tools used in the research:

Legal playing field for discus throwing.

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- Legal tablet weighing 1500 grams, count (6).
- Japanese-made video camera (Sony) with a frequency of 300 pictures / second, count (1).
- Tripod (1)

The scale of the drawing is 1 meter long.

- Tape measure length.
- Discs of different weights
- Medical balls with multiple weights
- Iron device with all its accessories
- Multiple height barriers
- Information registration form.

Exploratory experience

The most important thing that scientific research experts recommend for the purpose of obtaining accurate and reliable results is to conduct an exploratory experiment that is defined as "a preliminary experimental study carried out by the researcher on a small sample before embarking on the main experiment including choosing research methods" (Wajih Mahjoub, 1993, p. 179). On Saturday, corresponding to 11/16/2019, an exploratory experiment was conducted at three thirty in the afternoon on the Maysan Olympic Stadium for the purpose of stopping all the pros and cons that researchers may encounter during the conduct of the main experiment and also to identify the auxiliary team working on their tasks and ensure the validity of the work as imaging commanders. This experiment was conducted on two players outside the sample.

The Main Experience

The researchers conducted the main experiment on Thursday, January 23/2020, three o'clock in the afternoon at the Maysan Olympic Stadium. All the testers were photographed and they were (6) players. Each player was given six attempts and after the attempts were made and photographed, the researchers used the kinetic analysis program (Kinovea 0.8.7) to extract and analyze search variables.

Kinematic Variables

(Starting speed, starting angle, starting point height)

Statistical means:

The researchers used the statistical bag (SPSS).

1. Arithmetic mean.
2. Standard deviation.
3. Test (T) for correlated samples.
4. The final test

View and analyze results

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Table 3: Shows the Arithmetic Mean, Standard Deviations, Calculated and Tabulated (T) Value, and Significance between the Pre and Posttests of the Experimental and Control Research Group.

Variables		**Post-test**		**Pre-test**		(T) Calculated	**Values T Calculated**	The result
		Q	**A**	Q	**A**			
Disc starting speed	Experimental	2,12	0,92	18,98	1.13	15.30	1,71	Significant
	Control	1,69	1,13	16,10	1.42	15.15		Not significant
Disc starting angle	Experimental	1,88	0,37	37,22	3.50	32.61		Significant
	Control	1,43	1.07	35,90	3.46	32.84		Not significant
Highest starting point for the disc	Experimental	2,58	0.31	1.59	1.22	1.31		Significant
	Control	1,54	0.70	1.42	1.02	1.36		Not significant
Achievement	Experimental	2,32	0,43	39,27	3.75	34.48		Significant
	Control	1,59	1.00	36,10	2.16	34.43		Not significant
At a degree of freedom (23) and under its significance level (0.05)								

It is clear from Table (3) the arithmetic mean and the standard deviations of the variables under discussion of the experimental and control group and in the pre and posttests, where the results indicate a significant difference between the pre and posttests of the experimental group and in favor of the post-tests for all variables less than (0.05), which confirms the significance of the results and in favor of the post tests.

Table 4: Shows the Arithmetic Mean, Standard Deviations and the Calculated and Tabulated (T) Value of the Dimensional Tests between the Experimental Group and the Control in the Variables Under Study.

Variables	**Experimental group**		**Control group**		**(T) Calculated**	**Tabular**	**The result**
	Q	**A**	Q	**A**			
Disc starting speed	3,10	1,13	16,10	0,92	18,98	67 ,1	moral
Disc starting angle	3,97	1.07	35,90	0,37	37,22		moral
Highest starting point for the disc	2,33	0.70	1.42	0.31	1.59		moral
Achievement	2,85	1.00	36,10	0,43	39,27		moral
At a degree of freedom (46) and under its significance level (0.05)							

III. Discuss the Results

During the foregoing of the results of Table (4,3), it is clear that we have significant differences in the kinematic variables and achievement and for the benefit of the experimental group, and during what was found that the experimental group underwent the training program proposed by the researchers, whereas the control group was training in the traditional approach, and the researchers attribute that. The progress made to the proposed

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experimental approach, which contributed to the development of the speed of the starting of the disk, because the variable of the starting speed is one of the most important variables in the projectiles that affect the level of achievement directly, as there is a positive relationship and a direct proportion between the starting speed and its angle, and this is what appeared Hurry through the results presented, as the performance improvement can be demonstrated by emphasizing the correlation of a specific variable and a specific response, which has its effect on the subsequent stages of learning "(Bastawasi Ahmad, 1996, p. 65).

"Increasing the starting speed means that it corresponds to the optimum increase in the starting angle" (Talha Hossam El Din, 1993, p. 311).

Likewise, there is an evolution of the experimental group over the control group with regard to the post-test of the starting angle variable, and the researchers attribute this development to the result of the proposed exercises that contributed fully to the application of the correct angle of disc launch, as determining the large starting angle of the disc is related to the development of the stages of technical performance and the physical ability of the players and the development of flow In the performance, which was related to achieving the conditions for throwing when training on slopes, this result was consistent with the results of some studies that confirmed that obtaining the appropriate position during the throwing stage and the exploitation of physical capabilities Physical features help in obtaining a starting angle that is compatible with these capabilities and features that in turn increase the final range of the disc (Botgstion A. Bartinic Z.K, 1990,20-21).

The researchers attribute the development of the individuals of the research sample to the variable of the highest height of the starting point to the prepared training approach, where these exercises contributed to the development of special physical characteristics in the effectiveness of discus throwing and the emphasis on the work of the working muscles in the motor duty contributed to reaching the farthest point during the throwing process, which contributed to that In securing the best starting point, the discus throwing activity is one of the activities of the square and the field in which joint joints are involved and in harmony between the muscles used in the tensile and relaxing process during the throwing process. Thus, the development of the variable of the starting point has helped to increase the distance Horizontal (Paish, W Seme intelabsel V, 1994,82-83).

The researchers attribute the development that occurred in the achievement due to the exercises prepared by the researchers, as well as the regularity of the research sample in training during the prepared period, which contributed to the improvement of the achievement of the research sample, as well as through the improvement of the physical characteristics that the shooter needs due to regular training and the improvement that occurred The explosive power and the kinematic starting variables associated with the achievement indicated by the test results and kinematic analysis were pouring into the kinetic duty of the discus process, which is obtaining the furthest distance the disc reaches "This means that the development that accompanied all the variables gave Ahra to increase the efficiency and consistency of work between the joints of the body and the muscles working and then the production of greater power and thus increase achievement achieved "(AmmarMakki, 2005, p. 18).

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IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The proposed training curriculum had a clear effect on the variable starting speed of the disc.
2. The proposed training curriculum has an effect on the variable starting angle of the disc.
3. The proposed training curriculum influenced the height of the disc starting point.
4. The proposed training curriculum had a positive impact on achievement.

Recommendations

1. Researchers recommend to Iraqi trainers to rely on effective modern training methods and to include them in training programs and the need to emphasize the development of kinematic variables during training the effectiveness of discus throwing
2. Carrying out similar studies on other age groups.
3. The necessity of conducting similar studies on throwing activities such as gravity, spear and hammer.

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Accessory(1)

The training curriculum model is shown

Week: The first

Training Unit: The First

Today and date Saturday2019/23/11

Rest between groups	Groups	Physical exercises	Distress	Repeat by number	Rest between duplicates	Department of the training unit	Time per minute
The main section	10 minute	1- Throwing the disc from stability with different weights, emphasizing the speed of the throwing, as well as the starting angle and starting height	%100	6	30 Mins	2 minutes	5 minutes
	10 minute	2- Throwing the disk with movement and emphasizing the speed of the throw, as well as the starting angle and starting height	%65	4	mins 60	2 minutes	2 minutes
	5 minutes	Positive comfort	-	-	- mins 30	- 2 minutes	- 3 minutes
	10 minute	3- Torso exercises using the bar	%80	5	mins 30	2 minutes	3 minutes
	10 minute	4- Sequential jumping by step	%80	5			

Duration of the main section of the training unit: 45 minutes

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Accessory(2)

The training curriculum model is shown

Week :Fifth

Training unit: The tenth

Today and date :Tuesday2019/24/12

Duration of the main section of the training unit: 4 0 minutes

Rest between groups	Groups	Physical exercises	Distress	Repeat by number	Rest between duplicates	Department of the training unit	Time per minute
The main section	40 minutes 10 minute 5 minutes 12 minutes 13 minutes	1- Throwing the disk from rotation and legal weight, emphasizing the speed of the throwing, as well as the starting angle and starting height 2- Positive comfort 3- Iron exercises 4- Kidnapping exercises 5- Half a bear 6- Jerk Khalaf with the two men open 7- He ran 80 meters speed gradient	%100 %90 %90	6 3 3	1minute 1minute	2minutes 2minutes 2minutes	5 minutes 3 minutes 2 minutes

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