

Finding grades and standard levels of some special physical abilities for youth goalkeepers in handball in Iraq

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Abstract :*The importance of the research lies in the development of standard levels and levels of the physical abilities of the young goalkeepers in Iraq (ages 17-19), either the problem of research It is that the grades and standard levels of physical abilities are not available in the assessment of young goalkeepers and the recent emergence of the problem arose research is to try to fill the shortage in this aspect and to identify the physical level of the guards have the goal of research is 1. Finding standard standards of the core Biting the special physical abilities of the young goalkeepers in Iraq. Provide standard levels of some of the special physical abilities of young Iraqi goalkeepers. The researcher used the descriptive method in the survey method and the sample of the research represented by the guards of the youth movement in Iraq at the age of (17-18) years and the number of (30) players and the procedures of the field research is to determine the special physical abilities and tests of (throwing a medical ball weighing (2) kg, Stability, enemy 20 m of standing, bend the trunk to the front of the stand). The researcher reached the most important conclusions: 1. Most of the research sample was at an average level. The most important recommendations are: 1. The need to adopt tests in the tests of youth goalkeepers in Iraq at the ages of 17-18 years. 2. Adoption of the grades and standard levels of this study to evaluate the goalkeepers in Iraq youth ages (17-18) years.*

1. DEFINITION OF RESEARCH

1.1 Introduction and the importance of research

The use of modern scientific methods in evaluating educational processes is in line with the modern trends of developed countries that build their plans, evaluate their goals, and adjust their programs according to accurate data and statistics. Therefore, it is possible to determine the extent to which programs and plans achieve their goals, and to develop solutions to fully develop the curriculum or treatment to modify the course. Objective tests, a kind of technical means for modern evaluation, which made workers in most fields feel the need for tests in which they know the level of the individual.

Knowing the physical characteristics that an athlete should be characterized by in every event is one of the tasks of the sports coach when determining the methods of sports preparation required to raise the level of sports, and activities that achieve success if they have some basic physical characteristics as well as the movement performance of the skills of handball goalkeepers.

The scientific development at the present time has led to reliance on testing, measurement and evaluation, as they play an important role in developing programs, curricula, planning, organizing and evaluation processes in various fields of education in general and physical education in particular, as they help to identify the physical condition and level of the individual's motor skill, characteristics, and mental and social characteristics. .

The special physical abilities (such as the force characterized by speed, explosive power, transitional velocity, and length of strength) are the main pillar through which the player can perform the basic skills of handball goalkeepers in different circumstances or under the pressure of competitors or their performance in extremely difficult circumstances. The physical capabilities of the handball player are embodied in what The goalkeeper has the speed and response of movement and the ability to run fast that enables him to participate quickly in defense of his goal and speed of movement as "the sport of handball requires a high level of strength, speed and endurance, especially bearing speed in addition to agile flexibility" (25: 160).

The importance of the research lies in setting standard grades and levels for the special physical abilities of youth goalkeepers in Iraq aged (16-18) years to provide us with information about the physical condition of the players in order for us to find programs that are in line with their needs for the purpose of their development and development.

1.2 Research problem

In order to evaluate youth goalkeepers in Iraq with handball in their physical abilities, we must put tests for them on a regular and continuous basis so that the coaches can ascertain the condition in which the goalkeeper is. An accurate indication of his physical level, and since these grades and standard levels of physical abilities are not available to choose youth goalkeepers in Iraq, as well as scientific sources indicated the need to put standard bikes for every four years, so the research problem arose to try to fill the deficiency in this aspect, which is an attempt to identify The physical level of what these guards possess.

1.3 Research Aim

- Learn about the most important physical abilities of youth goalkeepers in Iraq with handball.

Find standard scores for some of the special physical abilities of youth goalkeepers with handball in Iraq.

- Finding standard levels of some special physical abilities for youth goalkeepers with handball in Iraq.

1.4 Research areas

- The human field: youth goalkeepers in Iraq, aged (16-18) years old.

- The time span: the period from 2/1/2019 to 2/15/2019.

Spatial domain: the closed halls of the Ministry of Youth and Sports in the governorates.

2. RESEARCH METHODOLOGY AND FIELD PROCEDURES

2.1 Research Methodology

The researcher used the descriptive method with the survey method for its convenience and solving his research problem.

2.2 Research sample

The researcher chose his research sample by the intentional method represented by youth goalkeepers in Iraq of (16-18) years old and their number (30) guards out of (40). The research sample represents (75%) of the original community of the research, where the researcher found the coefficient of homogeneity for a sample Research using the coefficient of variation, as "the sample is considered homogeneous whenever the difference coefficient is less than 30%" (24: 161) Table (1).

Table 1: shows the homogeneity of the research sample

varia * Coefficient tion	standa rd deviation	SM A	measure of Limit ment	Variables	T
10,64	1.91	17.95	Year	Chronological age	1
20,77	11.85	57.06	Kg	the weight	2
7,70	13.76	178.75	cm	Length	3

2.3 Research devices and tools

The researcher used the following devices and tools:

- Arab and foreign sources.
- the exams.
- Questionnaire forms specifying physical abilities and their tests
- Handball court.
- Medicine balls
- A seat without a back height of 50 m.
- tape measure
- stopwatch
- The auxiliary work team consisted of (MD. Haider Ghazi Aziz, MD. Yaqoub Youssef, M. Alaa Mohammed).

2.4 Field research procedures

2.4.1 Determining special physical abilities

The researcher surveyed and collected many sources and scientific studies and viewed most of the literature and studies related to handball to find out the components related to the special physical abilities that handball goalkeepers need and organize them. A questionnaire form (Appendix 1) was presented to a group of experts in the field of (training science, ball) The hand) (Appendix 2) in order to explore their opinions in determining the most important capabilities that they deem appropriate for research. The questionnaires are emptied and the relative importance extracted. Accordingly, the tests that obtained a score of 80% or more were approved, as shown in Table (2).

Table 2: Shows the relative importance of special physical abilities as selected by experts.

Relative importance	Special physical abilities	The sequence
% 86.67	arms power of the explosive	1
% 87.77	two power of the explosive The men	2
% 70.56	Muscular endurance	3
% 75.87	Speed Mtaulh	4
% 85,55	Transition speed	6
% 70.21	Fast power	8
% 74.11	Agility	10

% 84.44	Flexibility	12
% 70.77	Precision	13
% 73.33	Compatibility	14

2.4.2 Select research tests

The researcher prepared a questionnaire form (Appendix 3) to choose the most appropriate tests for the research variables, and the form was presented to a group of experts and specialists in the field of (training science and handball) (Appendix 2). And above and Table (3) shows that.

Table 3: Shows the percentage of tests that have been agreed upon by experts and specialists

percenta ge	The goal of the test	the exams	T	Special physical abilities	T
% 14.29	Measuring ful and its explosive arm	Throwing a soft ball to the farthest distance	1	The explosive power of the arms	1
%85.71	Measuring ful and its explosive armrests	Throwing a 2 kg medicine ball	2		
%0	Measuring ful and its explosive two men	Throw a hand ball weighing 800 g for the farthest distance	3		
% 81.42	Measuring ful and its explosive two men	The long jump from two feet	1	The explosive power of the two men	2
% 28.52	Measuring ful and its explosive two men	The vertical jump from two feet	2		
%0	Measuring ful and its explosive two men	Vertical jump from stability without using arms	3		
% 28.52	Measurement of the transition velocity	The test ran (3 0) m from high start	1	Transition speed	3
%0	Measurement of the transition velocity	The test ran (20) m from the flying position	2		
% 82.52	Measurement of the transition velocity	Sprint test(2 0) m	3		
% 83.45	To measure the elasticity of the trunk	Bend the trunk of the Imam of the stand	1	Flexibility	4

% 0	Measuring muscle material for the torso	Torso flexibility test for stretching from a lying position on the abdomen	2		
% 28.52	Measuring the flexibility of the back, hip, and legs muscles of the back	Back posture) performing backward(3		

2.4.3 Specifications of physical exams

- **First test:** The name of the test (throwing a 2 kg medicine ball) (13: 268).

The aim of the test: to measure the explosive force of the arms.

The tools used: an area of the ground, a tape measure, a 2 kg medicine ball.

Performance description: The player stands behind the line and pushes the medical ball with maximum force and speed (explosive movement). Each player is given two attempts, the best of which are scored for him.

Direction and scoring: The distance to the player is recorded in meters and its parts from the throwing line until the medical ball falls on the ground.

Steering and scoring: records the propulsion distance, calculates the distance in meters, and records the player's best attempt.

- **The second test:** the name of the test: the broad jump test of stability (400: 20).

The aim of the test: to measure the explosive power of the two men.

Tools: tape measure, chalk, flat ground to avoid slipping the laboratory, a line drawn on the ground (starting line).

Method of performance: The tester stands behind the starting line and the feet slightly apart. The arms are swinging forward, down and backward with the knees bent to the center and the torso tilted forward until it reaches what looks like the starting position for swimming from this position Swing the arms forward strongly with the legs extended along the torso and pushed Land with feet firmly by trying to jump forward as far as possible

Measurement: The distance of the jump is measured from the starting line (the inner edge) until the last trail left by the tester close to the starting line or the player does not touch the ground, and the laboratory has two attempts to score the best.

- **The third test:** the enemy's test distance (20) m. (13:383)

The aim of the test: to measure the translational velocity

The tools used: An area of (30) meters of land, one hour in length.

Performance description: When you hear the signal, run in a straight line from the starting line to crossing the finish line and count the time. Players lead together to the availability of a competition component.

- **Fourth test:** bending the trunk from standing. (13: 364)

The aim of the test: to measure the flexibility of the spine

The tools used: a seat without a back with a height of (50) cm, a stepped ruler from (0-50) installed vertically on the seat so that the number (50) is parallel to the surface of the seat and the number (zero) for the lower edge of the seat.

Performance description: The player stands on the bench with the feet together and the knees straight, then bends the torso forward and down as far as possible, provided that he is fixed at the last distance he reaches for two seconds.

Orientation and Registration: 1. The knees must not be bent during the performance 2. The player must perform two attempts to score the best of them 3. The last two seconds must be fixed and the maximum distance in centimeters is recorded.

2.5 Exploratory experience

The researcher conducted an exploratory experiment on (5) goalkeepers with the help of the auxiliary team, and at one o'clock in the afternoon on Sunday 6/1/2019 in the closed hall of Al-Karkh Sports Club, and the reconnaissance experiment aims to:

1. The suitability or appropriateness of the arrangement for performing the tests concerned.
2. Verifying the understanding of the assisting staff and their competence in conducting the tests and recording the results.
3. Knowing the obstacles that may arise and avoiding errors.
4. Knowing the time taken to carry out the tests.
5. The validity and safety of the devices and tools used in the tests.
- 2 6- Finding the scientific basis for the tests (validity, reliability, and objectivity).

2.6 The scientific basis for the proposed tests

2.6.1 Stability Test

The researcher used the test method and its re-application, as “the static test that gives similar results or the same results if it is re-applied more than once and in the same circumstances on the same sample” (Khair al-Din Aweys, 1999: 55), and accordingly the researcher found consistency by applying The tests were conducted on a sample consisting of (5) players on Sunday 6/1/2019, then the test was repeated again on the same sample after (5 days) had passed on Friday 11/1/2019, and through these results the stability parameters were found using the coefficient Pearson correlation as in Table (4).

2.6.2 The test was validated

The validity of the test depends on the extent to which the test or the characteristic to be measured is measured and does not measure anything about it or instead of it. Therefore, “a test that is characterized by high stability is characterized by high validity” (16: 553). The quadratic stability as shown in Table (4).

2.6.3 Objectivity of the test

What is meant by objective tests “are the tests that give similar results or the same results, regardless of the difference of the correctors or the judges, as the results are not affected by the subjective and personal factors of the scorer or the judge” (9: 72). Therefore, the tests are characterized by objective, since the test scores depend on the measurement of time or number The iteration or score a laboratory gets for a tool.

Table 4: shows the reliability and self-validity coefficients of the proposed tests

Honesty	Persistence	The goal of the test	The name of the test	T
92 .0	0.8 2	Measure the explosive force of the arms	Medical throw a ball weighing 2 kg	1
0.9 3	0.8 3	Measuring the explosive force of the two men	The long jump from stability	2
92 .0	84 .0	Transition speed	Sprint 20 m from standing	3

93 .0	85 .0	Flexibility	Bend the torso forward from standing	4
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2.7 The main experiment

After the examination vocabulary was presented and clarified by the researcher and the assisting work team in front of the goalkeepers before carrying out the tests, the following measures were taken:

1. Adequate warm-up time was given prior to testing.
2. The results were recorded by the work team according to the conditions for performing each test.
3. The tests were carried out for a period of (20) days and lasted from 01/15/2019 to 4/2/2019, where the researcher distributed the tests over this period.

2.8 statistical methods

The researcher used the following statistical methods in the ready-made bag (spss):
(The arithmetic mean - standard deviation - median - coefficient of variation - self-validity - percentage - range - modified standard score) (8: 147, 155, 213, 216).

3. PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

3.1 Presentation of the results of the arithmetic mean and the standard deviations of the research sample

Through Table (5) we note the arithmetic mean and standard deviations of the research sample tests, as it was found that the arithmetic mean of a medical ball of weight (2 kg) is (177.62) with a standard deviation (35.27) and the arithmetic mean of the long jump test of stability (119.03), a standard deviation of (15.74), while the arithmetic mean of a sprint test of (20 meters) from standing was (4.72) with a standard deviation (0.39). As for the test of bending the torso for the imam from standing, the arithmetic mean was (4.13) with a standard deviation (2.49).

Table 5: Shows the arithmetic mean and standard deviations of the research sample tests

p ±	- O	measruing unit	the test	T
35.27	177.62	cm	Throwing medicine weighed a (Kg2ball)	1
15.74	119.03	cm	The long jump from stability	2
0.39	4.72	the second	m from standing 20 Sprint	4
2.49	4.13	Degree	of trunk Bend the stand of the Imam the	5

2.3 Building standards and normative levels for the results of the research sample:

2.3.1 Finding Standard Scores:

After applying the tests to the research sample, preliminary results called raw grades were obtained, which are “the original result derived from applying the tests or any other

measuring tool before it was statistically treated,” so the raw scores were converted into standard scores in a sequential manner, as follows. (20 : 26):

$$\text{Standard score} = \frac{x - \bar{x}}{\sigma} \quad (1)$$

And through it, the researcher found the standard scores for the individuals of the research sample Table (6).

Table (6) : the raw scores and the standard score for the exams used in the search for goalkeepers aged (17-18) years

of trunk Bend the stand of the Imam the		m from 20 Sprint standing		The long jump from stability		Throwing medicine weighed a (Kg2ball)	
Standard score	Grades rough	Standard score	Grades rough	Standard score	Grades rough	Standard score	Grades rough
1.26 -	1	1.60 -	4.1	2.80 -	75	2.20 -	100
0.85 -	2	1.35 -	4.2	2.48 -	80	1.92 -	110
0.45 -	3	1.09 -	4.3	2.16 -	85	1.63 -	120
0.05 -	4	0.83 -	4.4	1.84 -	90	1.35 -	130
0.35	5	0.57 -	4.5	1.53 -	95	1.07 -	140
0.75	6	0.31 -	4.6	1.21 -	100	0.78 -	150
1.15	7	0.06 -	4.7	0.89 -	105	0.50 -	160
1.55	8	0.20	4.8	0.57 -	110	0.22 -	170
1.95	9	0.46	4.9	0.25 -	115	0.07	180
2.35	10	0.57	5	0.06	120	0.35	190
2.75	11	0.97 0	5.1	0.38	125	0.63	200
		1.23	5.2	0.70	130	0.92	210
		1.49	5.3	1.02	135	1.20	220
		1.74	5.4	1.33	140	1.48	230
		2.00	5.5	1.65	145	1.77	240
		2.26	5.6	1.98	150	2.05	250
		2.51	5.7	2.28	155	2.34	260

3.2.2 Defining Standard Levels:

After finding the standard scores for the results of the sample in the proposed tests, the standard levels were determined according to the Kaos curve of the normal distribution, as "most of the characteristics and characteristics that are measured in physical education approach their distribution to the normal distribution" (4: 301), and that the construction of these levels was based on The basis for dividing it into six levels chosen by the researcher within six ranges, for each range (1) of the standard scores within three standard deviations located to the right and left of the arithmetic mean, and the range divides it into “six standard degrees” (114: 22). Table (7) shows the limits of levels Standardized results of the research sample in the proposed physical tests.

Then the researcher put the results as quantitative numbers to find out the guard’s condition and where he is among his peers, as shown in Table (8).

Table 7: It shows the limits of the standard levels of the results of the research sample in the proposed physical tests.

Bend the torso forward from standing	m 20 Sprint from standing	The long jump from stability	Throwing a medicine ball	Appreciation
Less (12-) than	4.20 Less than	-175 more and	and -260 more	very good
-) - (11-) (7)	4.50 - 4.21	174-155	259-220	good
(2 -) - (6-)	4.80 - 4.51	154-135	219-180	Average
(4) - (1-)	5.10 - 4.81	134-115	179-140	Acceptable
(9) - (5)	5.40 - 5.11	114-95	139-101	Weak
(10) and more -	or more - 5.41	94- Up to	- Up to 100	Very weak

Table (8) : shows the limits and ratios for the standard levels of the research sample in the searched variables

Bend the forward torso	20 Sprint m From to parking	The long jump from stability	Medical throw 2 weighing ball a kg	the exams	Its proportions are in the curve	Standard levels
3	9	2	0	number	%2.14	very good
5	15	3.33	0	%		
9	13	8	9	number	13.59 %	good
15	21.66	13.33	15	%		
21	25	25	23	number	34.13 %	Average
35	41.66	41.66	38.33	%		
11	5	10	10	number	34.13 %	Acceptable
18.33	8.33	16.66	16.66	%		
5	4	8	9	number	13.59 %	Weak
8.33	6.66	13.33	15	%		
3	4	7	9	number	%2.14	Very weak

5	6.66	11.6 6	15	%		
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The researcher found that at a very good level, the sample achieved ratios with a level higher than the level determined for it in the normal distribution (2.14%) in the jump tests, the long (20 m) sprint test and the trunk bending test forward from standing, as the proportions were respectively (3.33, 5, 15), while the medical ball test did not achieve any significant percentage (0.00).

While the research sample achieved ratios higher than the standard in the normal distribution (13.59%) at the good level, as the ratios were respectively (15, 13.33, 21.66 and 15).

Whereas, the achieved percentages of the research sample at the average level were somewhat higher than the normal distribution level (34.13) and for all tests, which are respectively (38.33, 41.66, 35, 41.66).

While the research sample achieved percentages lower than the standard in the normal distribution (34.13%) at the acceptable level, as the percentages were respectively (16.66, 16.66, 8.33, 8.331).

At the weak level, the ratios achieved for the research sample were higher than the percentage in the normal distribution curve (13.59%) in the medical ball and long jump tests of stability, as they were respectively (15.13.33) while the achieved ratios for the two tests were (20 meters) from standing And bend the torso to the front from standing and lower, as it was (6.66,8.33).

At the very weak level, the achieved percentages of the research sample were higher than the normal distribution level (2.14%) and achieved percentages respectively (15, 11.66, 6.66, 5).

3.3 Discussing the results

After the results were presented and based on the sample level and previously shown, we find that the most frequent occurrences of the sample level in the test of throwing a medical ball from sitting, were at the average and acceptable levels, respectively (23, 10) and ratios (38.33, 16.66), which means that most of the individuals The research sample is at an average level in performing this test.

In the long jump test of stability, it was at an average level (25 by 41.66%), followed by an acceptable level (10 by 16.66%), which means that most of the research sample are at an average level to perform this test.

As for the enemy test (20 meters) from standing, the highest percentage of iterations recorded for the research sample was at the intermediate level (25 by 41.66%), followed by a good level (13 by 21.66%), then a very good level (9 by 15%), which indicates a high level of performance. Research sample in this test.

In the test of bending the torso to the imam from standing, we find that the most frequent occurrences were at medium level (21 by 35%) and acceptable level (11 by 18.33%), which indicates that most of the research sample are at an average level in performing this test.

The researcher attributes the emergence of these results and levels to the research sample, which has often achieved (average) level, to the quality and level of the tested goalkeepers, to the fact that it is a natural condition for such guards in such circumstances in which we live and the lack of capabilities for training methods in which the simplest types of tools and modern devices are not available. Trainers use it in their training and supplement units to prepare the guards physically and skillfully.

On this available basis and the analytical discussion requires a review and reconsideration of how the sample is chosen in terms of quantity and quality first, and the training programs and plans secondly with follow-up and the continuation of the objective evaluation to prove the merit and scientific evaluation of what has been reviewed and the evaluation or re-review

of the schematic until an advanced curve is recorded within the selection record Successful player's physical, skill and planning abilities and capabilities.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Through presenting, analyzing and discussing the results, the researcher concluded:

- Most of the research sample was at an intermediate level.
- Statistical treatments showed standard scores for each of the elements of the special physical capabilities of youth goalkeepers in Iraq aged (17-18) years in Tables (6).
- The tests of special physical abilities under study for youth goalkeepers in Iraq aged (17-18) were distributed naturally, which indicates the suitability of the tests for the research sample.

4.2 Recommendations

Through the researcher's findings and conclusions, he recommends the following:

- The necessity of adopting the tests as part of the tests for youth goalkeepers in Iraq aged (12-14) years.
- Adopting the grades and standard levels for this study to evaluate youth goalkeepers in Iraq at ages (12-14) years.
- Conducting a similar study on other groups in Iraq and for skill and physiological tests.

5. REFERENCES

- [1] Al-Nafakh, Nizar Hussain: Setting Standard Levels for Basic Handball Skills, Unpublished Master Thesis, College of Physical Education - University of Babylon, 2000.
- [2] Bastwissi Ahmed; Foundations and Theories of the Movement, 1st Edition, Cairo, Arab Thought House, 1996.
- [3] Bastwissi Ahmed: Foundations and Theories of Sports Training, Cairo, Arab Thought House, 1999.
- [4] Jamil Qasim Al-Badri and Ahmad Khamis Radi Al-Sudani; The World Handball Encyclopedia, 1st Edition: Baghdad, Arab Book House, 2011.
- [5] Jaber Abdel-Hamid and Ahmed Khairy; Research Methods in Education and Psychology, Cairo: Dar Al-Nahda Al-Arabiya, 1993.
- [6] Hazem Alwan; Finding standard scores for some basic handball skills, Master Thesis, College of Physical Education / University of Baghdad, 1990.
- [7] Hassan Ahmed and Suzan; Principles of scientific research in physical education and sports. Alexandria: Library of Knowledge, 1999.
- [8] Khair al-Din Aweys; Scientific Research Directory, Cairo: Arab Thought House, 1999.
- [9] Donald Ari (et al), translated by Saad Al-Hussein; An introduction to research in education. I 2. Al-Ain: University Book House, 2000.
- [10] Risan Khuraibet Majeed; Scientific Research Curricula in Physical Education, Mosul: The Book Directorate for Printing and Publishing. 1987.
- [11] Saleh Shafi Al-Ayedhi; Sports Training, Ideas and Applications, Anbar, House of Books and Documents, Baghdad (707), 2011.
- [12] Abdul-Basir Ali; Adel Abdul-Basir Ali; Mathematical Training and Integration between Theory and Practice, 1st Edition: Cairo, The Book Center for Publishing, 1999.
- [13] Ali Salman Abdul-Tarfi; Applied Tests in Physical Education, Al-Noor Office, Baghdad, 2013.

- [14] Luay Ghanem Al-Sumaidaie and Others: Statistics and Examination in the Mathematical Field, 1st Edition, Erbil, 2010.
- [15] Muhammad Jassim Al-Yasiri; The theoretical foundations of physical education tests, 2nd edition, Dar Al-Diya for Printing and Design, Najaf, 2010.
- [16] Muhammad Jassim Al-Yasiri; Principles of Educational Statistics, 2nd Edition, Dar Al-Diya for Printing and Design, Najaf, 2010.
- [17] Muhammad Hassan Allawi and Muhammad Nasreddin; Skills and psychological tests in the sports field. I 2. Cairo: Arab Thought House, 1987.
- [18] Muhammad Hassan Allawi and Muhammad Nasreddin Radwan: Measurement in Mathematical Education and Sports Psychology. Cairo: Rose Al-Youssef Foundation 1979
- [19] Muhammad Hassan Allawi; Science of Sports Training, Cairo, Dar Al Maaref, 1992.
- [20] Muhammad Hassan Allawi and Muhammad Nasreddin Radwan; Kinetic Performance Tests: Cairo, Arab Thought House, 1994.
- [21] Muhammad Hassan Allawi and Muhammad Nasreddin Radwan; Measurement in Physical Education and Sports Psychology, Cairo, Arab Thought House, 2008.
- [22] Muhammad Subhi Hassanein; Evaluation and Measurement in Physical Education, Part 1, 1st Edition, Cairo, Arab Thought House, 1987.
- [23] Mufti Ibrahim Hammad; Modern Sports Training Planning, Implementation and Leadership, Cairo: Arab Thought House, 1998.
- [24] Nizar Talib and Mahmoud al-Samarrai; Statistics, physical and mathematical tests. Mosul: Dar Al Kutub for Printing and Publishing, 1981.
- [25] Nawar Abdullah Hussein; Determining standard levels of some (special physical characteristics, basic skills, and anthropometrics) for different playing lines, Master Thesis, Al-Qadisiyah University, College of Physical Education, 2007
- [26] Wajih Mahjoub; Kinesiology, Kinetic Education, University of Mosul, House of Books and Documents, Dar Al-Kutub Publishing House, 1989
- [27] Johnoth , Rolf , Kerm, Konditian training , Rowhlt taschen bach , verlag cmbh, Reinbek bei Hamburg , 1984.
- [28] [http://www. Robert Dixon](http://www.RobertDixon.com) ; Cognitive Aesthetics Accoun, journal, Leonardo : year 1986 : Volume: 19, issue : 3, page 237. Virtual Library.