Evaluate the Effectiveness of Mastering the Skill Performance for Receiving Serve to the Level of Motor Coordinative Abilities for Volleyball Players

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Abstract: This research aims to evaluate the effectiveness of mastering the skill performance for the reception of transmission capacity in the light of the level of interoperability of the volleyball players through Determination level of Motor Coordinative Abilities for volleyball players, Biomechanical Indicators During performance receiving serve skill in Volleyball, Develop predictive mathematical equations To evaluate the effectiveness of mechanical for receiving serve skill to the level of Motor Coordinative Abilities for volleyball players. The researcher used the descriptive method. Search sample consisting of 24 fourth year student at the Faculty of Physical Education for Boys, Zagazig University for the academic year 2008/2009 (experimental sample of 14 students - 10 students exploratory sample), Researcher select tools and means of data collection in three main sections As follows: Motor Coordinative Abilities Tests, The motor unit of analysis "Elite", Tools and measuring devices. The researcher used statistical processors: Coefficient, "T" Test, correlation coefficient, multiple regression analysis. The researcher found to the following conclusions: The values of the level of compatibility capacity tests are an important indicators suitable capacity in evaluating the level of interoperability of the volleyball players, Can use the following predictive equations to evaluate the effectiveness of mastering the skill performance: The level of capacity compatibility = 0.19 + (-0.060 × vertical velocity of the center point of gravity body moment beginning to touch the ball of the arms) + (0.813 × angular velocity of the elbow joint moment beginning to touch the ball of the arms) + 0.204 × speed horizontal moment end up of the arms) + -0.111x the horizontal displacement of the front foot touching moment for land) + (0.354 × angular change of the shoulder joint moment beginning to touch the ball of the arms).

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1. Introduction

The process of evaluating performance skill or technique sports objectively through observation of the performance or the technique Note passing, is one of the processes difficult for researchers or trainers, especially in skills that require a high degree of compatibility between the components body used in the performance of those skills, dubbed complex skills, and reason for this is that the skill performed in this case is characterized by elaborate minutes hard observed, as the high-speed in the implementation process is the hallmark of performance and one of the main requirements, so it is important the need to evaluate performance skills and according to tests adopt the same tracks kinetic performed when performing the same performance skills, because mastering the skill and improve performance on the authenticity of details partial constituent minute performance and how its union.

Sports & volleyball sports complex nature both of the skills performed or the circumstances surrounding the duties of offensive and defensive therefore muscle action is always collectively, not individually, and the occurrence of mechanical movements Home must constrict where many muscles and concomitant agree these muscles with each so that production maximum power possible.

Motor Compatibility of the most important factors that must be available in a volleyball player so that he has the speed to meet and attend my mind and well-behaved because movements volleyball requires speed and skill in the performance, and the volleyball a sport that depends on the physical side and skill The tactical and characterized by confrontation between the team and the last try through each of his players as much as he can to obtain the lead in scoring first before you can register it through the use of performance and exchange of sentences consisting of offensive and defensive skill..

The group movements consisting of Technical Sports each router to achieve the goal of a sub particular in the framework of the final goal, and these movements of individual many interrelated with each other in units College integrated acts kinetic form in the end "system of movements," he adds beauty Aladdin it from the perspective of Mechanical being considered performance skill system for any movements as the union of a large number of detailed

movements to represent itself and College units of motor acts directed to specific purposes apparent activity (**Jamal , 1995**).

To judge the quality of the technique leaves coach players performing technique meaning under conditions of constant, except that when you try engaging competitor or colleague in a position test cannot maintain the requirement or condition installation conditions performance (as is always the case when performing reception transmission in volleyball). And imposing installation conditions performance it usually arises difficulty in reaching specific conclusions level achievement competition based on the test result, and adds that the validity of tests technique sports less when they are determining the outcome of the test meter or second, it does not reach these values to conclusions reliable on quality motor track, which was used in the performance, and it is possible to identify errors technique used in testing the light dimension, height or time performance (Al-**Sayed 1994**).

For these reasons, the best way to follow the technique is evaluated using a form Note Raster a description preset for optimal performance for each part of the movement can coach by comparing the performance of sports and the available data model to recognize and record deviations Technical sports for technique ideal, this one hand, and by last stay we have a problem which is that the coach he could way previous knowledge of the degree of near or similar technique sports with more performance patterns logical only without standing on the possibility of a degree reflect the effectiveness of mastery performance skills meaning, which can be useful in forecasting the level of the high level of performance player in this skill or those.

And intended to effectively master the skill performance of this or that athletes "near or similar degree this performance skills with more technique patterns logical and rational scientific".

When approaching or equal performance skills with more patterns logical and rational technique based on scientific considerations and concepts Biomechanical we can label the effectiveness of mastering the skill performance in this case effective mechanical (**Jamal 1995**).

And linked to the effectiveness of mastery performance skill for any skill than the capacity of the individual as it is normally in sports activities that depend on the capabilities of compatibility and capabilities foundations physical equally almost-and which ones Volleyball-occurs in many instances exaggerated development capabilities foundations physical and reduce to a great extent from importance of interoperability capabilities, despite its importance to the mathematical technique.

Capacity is compatibility qualities of the level of achievement of sports which specializes compatibility aspects in motor performance, and while the skill sets the direct basis for a given level of performance, the compatibility capacity represents an essential basis for training on a whole series of sports activities. There are reciprocal relationships between compatibility capacity and motor skills, as well as the level of each depends on the other.

And vary the importance of capacity compatibility generally, also vary the importance of each ability capacity particularly of sporting activity to another, and show their importance in Volleyball Given the diversity of performance art with simultaneous performance rival, capacity compatibility linked to other factors achievement sports represented in physical characteristics and technical duties.

I have found out from the tests that the player with the high level of capacity compatibility public and private can be conducted (Note and analyze the specific situation and appropriate action and taking in the actual implementation) very quickly, and this is what you need movements offensive and defensive in most sports and shows evident in Volleyball at exploit a loophole in order to register a point directly in opponent's court, and is worth noting that the presence of a basic rule of capacity at the level of compatibility development is a prerequisite for learning skills tactical and applied in accordance with the conditions of the match.

The researcher believes that the sport volleyball rich movements offensive and defensive, which requires the player to crucial decisions and movements quick and response speed and power Note to exploit gaps as they arise, as it is characterized by multiple motor skills, which is linked to the extent Mastery capabilities player physical and how he benefited from those physical abilities which owned and according to the circumstances of the game.

The receiver transmitter a skills defensive important in volleyball and any error which lead to win the opposing team point Hence the importance, as well as affect the quality of the defense of transmission for both the setting and the attack should therefore lifted the ball high and accuracy forwarded to the player prepared It's not just about defense, but also provide guidance for the preparation and transmission defense skill independent and not related to the rest of other skills as they open confrontation between rival sender and the future of the player (**Khalid, 1996**).

From the above it is clear that the effectiveness of the performance skills of the player destined standards Albyumkanikih (effective mechanical) depends directly on its interoperability, which can

then be through knowledge of coach capabilities player harmonic stand on the degree of mastery of the skills volleyball during competitions especially those skills that characterized complex.

This research is an attempt by the researcher to evaluate the effectiveness of mastering the skill performance of one of the skills of volleyball, a reception in the light of the level of transmission capacity harmonic of the players.

Objectives

This research aims to evaluate the effectiveness of mastering the skill performance for the reception of transmission capacity in the light of the level of interoperability of the volleyball players, through:

1- Identify the level of some of the compatibility capacity of the volleyball players.
2- Identify Biomechanical Indicators during transmission performance skill receive in volleyball**.**
3- Develop predictive mathematical equations to evaluate the effectiveness of mechanical skill receive transmissions in the light of the level of compatibility capacity for volleyball players**.**

Assumptions

Researcher can formulate hypotheses in the form of the following questions:

1. What is the level of compatibility capacity volleyball players**?**
2. What indicators Biomechanical Indicators transmission performance skill receives in volleyball**?**
3. What predictive mathematical equations necessary to evaluate the effectiveness of mechanical skill receive transmissions in the light of the level of compatibility capacity for volleyball players?

2. Measures

Method

The researcher used the descriptive method Due to its relevance to the nature and search procedures Current.

Sample

Researcher chose sample intentional way of fourth year students at the Faculty of Physical Education for Boys, Zagazig University for the academic year 2008/2009, They first specialization students Volleyball and players practicing for the sport of volleyball And number (24) student, Were identified as the best (14) in terms of student performance skill technical for Experimental sample and Ten students sample exploratory, The table below illustrates the statistical characterization of the total sample:

Table (1) shows that all coefficients sprains may confined between ± 3 indicating the occurrence of total respondents within the curve equinoctial variables.

Table (1) Statistical characterization of total sample in research variables, N=24

Variables		Arithmetic mean	Standard deviation	median	Kurtosis	Skewness
Growth	Age	18.98	1.12	18.40	-0.68	-0.25
	Height	186.9	1.20	187.00	-0.78	-0.95
	Weight	81.46	4.05	80.5	-0.69	0.71
Compatibility Capacity	Accuracy performance	2.83	1.27	3.00	-0.66	-0.39
	Muscle power	9.71	1.81	9.44	-0.14	0.45
	Motor sensation	1.46	0.98	1.12	-0.85	1.04
	Motor response speed	0.32	0.05	0.31	-1023	0.40
	Flexibility thigh	12.50	1.93	12.50	0.19	0.00
	Maintain a balance	6.92	2.10	6.87	-0.58	0.07
	Compatibility	5.54	1.22	5.21	0.21	0.82
	Motion control	43.71	9.58	45.00	1.54	-0.40
	ability to change direction	41.17	8.51	43.00	1.15	-0.65

Data collection tools

Compatibility Aptitude Tests

Experts recognized number nine compatibility tests reflect the level of compatibility capacity associated with volleyball skills, sending and receiving skill in particular, which are as follows:

- Reaction time test to measure the speed of motor response (Second).
- kinesthetic sense Test of the arm to measure the ability of a sense of motor (Centimeter)
- Progress and regression testing of various dimensions to measure the ability to control movement (Second)
- Progress test in the form of shuttle to measure the ability to change direction (Second).
- Progress on a bench test to measure the ability of Swedish maintain balance
- Scroll ball on the ring attached test to measure the accuracy and performance is measured primarily.

- Progress step for Jump fast test to measure the ability of muscle measured in centimeters.
- The transition between the circles numbered for Jump quick test to measure the ability to compromise and is measured in seconds.
- Hip flexibility test measured in centimeters.

The motor unit of analysis Elite

Consists of: Computer, Calibration Grid, Motion analyzer, Motion analyses, Special camera display screen (14 inches) to see a luminous signs, Special camera infrared frequency 50 cadre / s installed on a tripod own specifications CCD-TVC Infrared, Adhesive tag group different sizes starting from 1 mm to 1 cm indoor surface textured especially given the reflection (red light), and associated with each unit a special set of cables.

Tools and measuring devices

- Rstamir to measure height and weight.
- Reaction time device to measure the speed of motor response, this has been calibrate these devices to make sure integrity and sincerity in the expression of the measured capacity.

Steps run the unit of analysis of motor "Elite"

1. Calibration:

Calibration depends on your Calibration Grid is a panel mounted with a set of signs of the same type and size, which proves the player, and placed in the form of rows and columns perpendicular to the distance between the marks in rows and columns always equal.

2. Photography:

Imaging, taking into account that the player inside the display Level moment start filming in order to be the first to start Level photography is the same cadre in which the player is shown inside the camera's display and according to previous standards

3. Design movement model:

At this stage begin the setup process to extract kinetic calculations required of the device through the appropriate design Model according to the type of traffic and the number of signs installed on the player's body.

After designing a model of movement can be extracted and calculate all the required mechanical switches and call the file every attempt from the computer where it is calculated electronically.

Imaging research sample

The researcher filming sample analysis unit of Elite Motor on Tuesday 14/4/2009 inside lab Faculty of Physical Education for Boys, Zagazig University, where he was recording data by following these steps:

1- Preparing capture location:

Processing and preparation of location filming inside lab Faculty of Physical Education for Boys, Zagazig University and processing the calibration panel

2- Preparation of the camera:

The researcher used the camera of the analysis unit of Elite Motor It works just like any other unit to a constant current source, frequency and speed 50 cadre / s, has been installed on a stand one meter high is half the height of the calibration panel Calibration Grid measured from the Earth's surface.

3- Prepare players for filming:

Were measured both height and weight for each player individually, then the researcher an indicative marking clearly on the major joints of the body of the players and in front of the camera.

4- Implementation and record attempts:

Was filmed attempts according to the data recording steps mentioned above, the researcher has taken into account that lead players attempts in the same circumstances as the performance of real competition, with interest by the researcher on the importance of giving instructions continuous performance for private players.

5- Account data and variables:

Register and calculate the coordinates of points in an automated fashion Instant on the device, and then stored in the memory, and considering that these data are primary sources for all accounts mechanical, the researcher used special program to address and account data integrity analysis motor for dynamic variables required by the study of the number of attempts that have been implemented.

After that, the researcher to enter and calculate the coordinates of the points of the stages of the subject of the study in light of the limits and possibilities of the user program and in the presence of a single camera with only two dimensions, the researcher was able to calculate the mechanical variables that identified through the scoping study.

Measuring the level of consensual capacity player

The researcher measured capacity consensual players respondents core Thursday 16/04/2009 AD and the gym Faculty of Physical Education, Zagazig University, because of the different units of measurement Capacity harmonic research topic, the researcher has to transfer grades of crude to the degrees of standard, easy to handle to determine the degree of each player in the harmonic fit capacity used as the dependent variable is used in evaluating the effectiveness of mechanical skill in question, and the following table shows the results.

Table (2) shows values grading standard sample of basic research in the capacity compatibility under discussion, as evidenced by the average capacity compatibility and total for each player on the unit, and thus the researcher was able to get the dependent variable truly reflects the level of capacity compatibility combined for each player of volleyball players separately.

Table (2) standard grading for level of compatibility capacity basic sample, N=14

Players Number	Variables										
	A	B	C	D	E	F	G	H	I	J	K
1	62.12	31.15	44.97	46.32	51.22	39.01	34.10	84.83	44.98	44.74	402.59
2	62.12	36.76	56.71	35.28	59.79	57.11	48.01	84.83	44.98	49.95	449.59
3	62.12	59.23	56.71	35.28	42.66	70.70	54.97	44.75	59.03	53.94	485.45
4	55.83	59.23	44.97	31.60	34.9	43.53	68.88	40.66	48.50	47.48	427.29
5	55.83	47.99	56.71	46.32	59.79	39.01	61.93	50.66	69.56	53.09	477.80
6	36.98	59.23	33.23	61.04	42.66	43.53	54.97	53.74	66.05	50.16	451.43
7	43.27	42.38	44.97	46.32	59.79	52.59	48.01	49.65	48.50	48.39	435.48
8	43.27	59.23	56.71	57.36	51.22	61.64	41.05	52.10	59.03	53.51	481.61
9	36.98	53.61	44.97	53.68	59.79	52.59	34.10	47.20	48.50	47.94	431.45
10	43.27	47.99	56.71	57.36	59.79	43.53	54.97	82.33	48.50	54.94	494.45
11	36.98	36.76	44.97	57.36	34.9	52.59	48.01	84.83	44.98	44.95	404.57
12	49.55	47.99	33.23	53.68	42.66	39.01	54.97	84.83	44.98	46.11	415.00
13	62.12	59.23	56.71	57.36	42.66	61.64	54.97	47.20	37.96	53.32	479.85
14	49.55	59.23	68.45	61.04	59.79	43.53	41.05	46.38	34.45	51.50	463.47
Arithmetic mean										50.00	450.00
standard deviation										3.47	31.23

(a)Accuracy performance, (b)Muscle power, (c)Motor sensation, (d)Response Speed, (e)Thigh Flexibility, (f)Balance, (g)Compatibility, (h)Motion control, (i)Change direction, (j)Average capacity compatibility (Degree standard), (k) Total compatibility capacity (Degree standard).

3. Results

Table (3) shows the values of the average speeds and wheel offsets and vertical and horizontal body's center of gravity of the Basic sample, during moments of performance time to receive skill transmission under discussion.

Table (4) shows the values of the angular velocity and angular change to annex, shoulder joints, hip and knee of the Basic sample, during moments of performance time to receive skill transmission.

Table (5) shows relations relational variables speed, displacement and vertical and horizontal wheel to the body's center of gravity for the basic level of sample them harmonic capacity and performance during moments of time to receive skill transmission under discussion.

Table (6) shows relations relational variables angular velocity and angular change to annex and shoulder joints and hip and knee for the basic level of sample them harmonic capacity and performance during moments of skill receiver transmitter under discussion.

As can be seen from the tables (5) and (6) the existence of relations correlation function between some variables Albyumkanikih and the level of capacity consensual respondents core of which is covariant, including what is reverse, The researcher select the highest twelve variable Biomechanical closely plant capacities harmonic variables independent, suitable proficiency in evaluating the effectiveness of performance skill to receive the transmission, which according to their order in the tables are as follows:

1. The horizontal displacement of the body's center of gravity for a moment touch the front foot of land 0.917.
2. Vertical velocity of the center of gravity of the body for a moment beginning to touch the ball for arms 0.969.
3. Horizontal wheel to the center of gravity of the body for a moment beginning to touch the ball for arms 0.886.
4. The horizontal speed of the body's center of gravity for a moment the end of the follow-up of the arms 0.942
5. Angular change of the shoulder joint moment beginning to touch the ball for arms .905
6. Angular velocity of the shoulder joint moment the ball out of the arms -0.821
7. Angular velocity of the elbow joint moment beginning to touch the ball for arms 0.952
8. Angular change of the elbow joint moment the ball out of the arms 0.847
9. Angular velocity of the elbow joint the moment of the beginning of the follow-up of the arms .897
10. Angular change of the hip joint moment of the beginning of individual arms 0.868
11. Angular velocity of the hip joint moment the ball out of the arms 0.898
12. Angular change of the knee joint to the moment of the beginning of individual arms .857.

Accordingly wills the researcher subjecting Biomechanical variables previous as independent variables to analyze the decline of the level of harmonic capacity dependent variable according to the equation: $y = \alpha + bx$ (Mohammed Melegy 1998)

Table (7) shows a decline indicators Biomechanical receive transmissions on skill level of harmonic capacity for basic research sample.

Table (3) Characterization some Biomechanical variables written to point the body's center of gravity to sample during the performance of receiver transmitter skill in volleyball

Performance Moments	Speed (cm / sec)		Displacement (cm)		Wheel (cm / sec 2)	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
Moment of beginning of individual arms	0.51	0.44	2.01	0.33	2.33	0.23
Moment beginning to move the front foot	3.58	2.52	95.63	34.36	49.64	21.96
The moment of beginning of touching ball for arms	28.56	12.97	96.36	42.28	88.81	-53.97
Moment the ball out of arms	-14.58	289.64	98.63	62.39	987.91	4421.87
Moment of beginning of follow-up of arms	-46.39	198.63	96.39	79.36	-198.66	-5996.38
The moment of the end of follow-up of the arms	-38.64	324.28	88.69	93.64	107.64	-321.58
A touching moment forefoot of the Earth	-8.91	55.24	82.84	112.23	-15.68	199.67

Table (4) Characterization some Biomechanical variables corner of the body's center of gravity point to sample during the performance of receiver transmitter skill in volleyball

Moments performance	Elbow angle		Shoulder angle		Thigh angle		Knee angle	
	Angular velocity	Angular change	Angular velocity	Angular change	Angular velocity	Angular change	Angular velocity	Angular change
Moment of beginning of individual arms	0.551	68.69	0.22	29.86	0.44	99.90	-0.08	44.04
Moment beginning to move the front foot	4.25	122.95	4.01	35.91	-3.56	89.36	3.88	42.87
The moment of beginning of touching ball for arms	2.93	128.69	4.11	64.89	-0.21	81.14	5.08	56.98
Moment the ball out of arms	1.58	139.63	4.26	97.89	-2.01	76.85	5.11	79.96
Moment of beginning of follow-up of arms	0.23	159.86	1.97	118.67	0.98	64.59	-0.97	89.96
The moment of end of follow-up of arms	0.39	161.89	0.369	122.85	-0.14	64.28	0.39	102.24
A touching moment forefoot of the Earth	0.11	169.49	0.42	124.98	-0.08	58.58	0.27	108.83

Table (5) Relational relations between Biomechanical variables linear point of the center of gravity of the body during the performance Receiver transmitter skill in volleyball and the level of harmonic capacity to sample

Performance Moments	Speed (cm / sec)		Displacement (cm)		Wheel (cm / sec 2)	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
Moment of beginning of individual arms	-0.798	0.601	-0.575	0.597	-0.197	0.657
Moment beginning to move the front foot	-0.456	0.624	-0.217	0.458	-0.801	0.732
The moment of beginning of touching ball for arms	-0.969	0.645	-0.828	0.621	-0.695	0.886
Moment the ball out of arms	-0.598	0.698	-0.369	0.794	-0.596	0.775
Moment of beginning of follow-up of arms	0.414	0.711	0.358	0.587	0.421	0.783
The moment of the end of follow-up of the arms	-0.208	0.942	-0.221	0.575	-0.365	0.456
A touching moment forefoot of the Earth	0.186	0.503	0.121	0.917	0.213	0.358

Value "t" spreadsheet at 0.05 degrees of freedom 12 = 0.532

Table (6) Relational relations between Biomechanical variables corner to the center point of the weight of the body during the performance Receiver transmitter skill in volleyball and the level of harmonic capacity to sample

Moments performance	Elbow angle		Shoulder angle		Thigh angle		Knee angle	
	Angular velocity	Angular change	Angular velocity	Angular change	Angular velocity	Angular change	Angular velocity	Angular change
Moment of beginning of individual arms	-0.658	-0.358	-0.358	-0.864	0.538	0.868	0.669	0.857
Moment beginning to move the front foot	-0.682	0.658	0.639	-0.658	0.658	-0.639	0.487	0.599
The moment of beginning of touching ball for arms	-0.952	0.598	-0.358	-0.905	0.759	0.852	0.638	0.537
Moment the ball out of arms	-0.332	0.847	-0.821	-0.638	0.898	0.635	0.587	0.498
Moment of beginning of follow-up of arms	0.897	-0.741	0.385	0.328	-0.256	0.587	0.538	0.638
The moment of end of follow-up of arms	0.568	0.639	-0.459	-0.587	0.674	-0.527	-0.358	0.627
A touching moment forefoot of the Earth	-0.758	0.628	-0.358	-0.689	-0.745	-0.214	-0.085	-0.217

Value "t" spreadsheet at the 0.05 level and degrees of freedom 12 = 0.532

Table (7) Slope indicators Biomechanical skill receiver transmitter on the level of harmonic capacity for basic research sample

Indicators contributing Biomechanical	Standard error	Fixed amount	Contrast Ratio	Indicators Biomechanical and transactions regressions					Contribution rate
				1	2	3	4	5	
Vertical velocity moment beginning to touch ball for arms	0.46	1.02	10.81	1.714					93.91%
Angular velocity of elbow joint moment beginning to touch the ball for arms	3.22	0.97	4.96	1.487	2.228				95.98%
Horizontal speed moment of the end of the follow-up of arms	0.06	0.15	1.58	0.185	0.241	0.213			97.19%
Horizontal displacement of front foot touching moment of Earth	0.31	0.15	1.07	0.201	0.201	0.227	0.003		98.09%
Angular change of shoulder joint moment beginning to touch ball for arms	0.18	0.19	0.22	-0.061	0.812	0.204	-0.111	0.354	98.82%

4. Discussion

Indicates a lot of scientists to the importance of the elements of capacity harmonic previous in guiding performance skills and the ability to control it by the player, especially in the skills of the vehicle and which need to be able to recognize trends and changed quickly and suddenly, it is foreseeable physiological refers both Gary (**Howley 1994; Kamen, 2001,**) to the continuing operations (area visual brain) benefit greatly in the transfer of information through neural pathways parallel to the cortex, and that these tracks isolate during ongoing operations and during transmission of information successive for the different parts of the cortex cerebral.

Indicates (**Scott, et al., 1994**) The spinal cord contribute significantly in guidance and control in accuracy performance movements, especially those movements that rely on high-speed component which may require bringing higher orders from higher brain centers of the motor system, As Williams points et **Williams and Walmsley, (2000)** that whenever the role of Central nervous system a few in the movement's performance whenever movement was more primitive.

Both the **Duell, (1982) and Roth & Willimczik (1999)** That must be dealt with changing attitudes in the game in light of the mental processes and decision-making, where they are aware position competition after making the right decision in advance, and by comparing the decision, the process of perception, can find a model to resolve the appropriate current position, followed by a final decision to deal with the attitudes changing in the game.

Table (1) shows a statistically complete description of the level of players in the harmonic elements of capacity, where the results indicate a significant increase in the level of harmonic capacity when players, and by comparing their results the results of the other samples for various studies. As in the study **Rabha (1996)**, **Essam (1998), Amr (1998), S Shirin (2001), Mekota (1991) and Starosta (1995),**

Thus, the results obtained by a researcher from the research sample college The results are high in capacity harmonic under discussion, especially as they sample of the best students of specialization, and many of them within the volleyball team for the College team and the University of Zagazig, where it became clear from the results of this research high level players in the performance of those attack by comparing their results with the results of Model used in search.

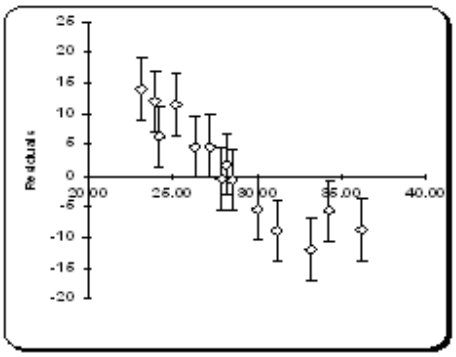
The researcher believes having reassured the results of capacity harmonic of a sample of basic research that these capabilities reflect faithfully the high level skill for this sample and therefore reassured to use the level of capacity harmonic in evaluate the effectiveness of mastery performance skill for any skill private vehicle skill receiver transmitter research topic.

Therefore, the researcher in the table (2) converting grades of crude capacity harmonic sample basic degrees standard, so easy to handle because of the different units of measure all the ability of these capabilities, as evident from the table values average capacity harmonic players sample, which express the level of capacity harmonic sample players.

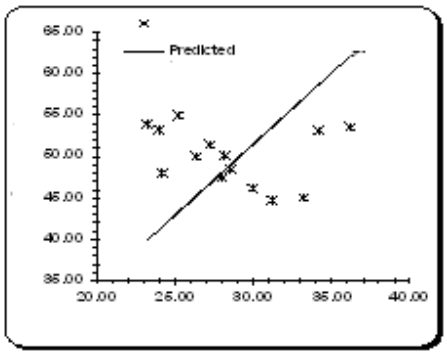
In the table (3) the research presented values averages speeds and wheel offsets and vertical and horizontal body's center of gravity of the core sample, during moments of performance time to receive skill transmitter. As the table (4) displays the values of angular change and the angular velocity of the annex and shoulder joints and hip and knee of the core sample, during moments of performance time to receive the transmission

The researcher also received correlation coefficients between the results of the analysis of motor skill under study linear and angle between the level of harmonic capacity for research sample players, and tables (5)&(6) illustrate the values of these transactions.

In Table (7), the researcher subjecting the best (12) achieved the highest variable level of harmonic capacity links to multiple regression analysis; results have resulted in the following:



Form (1): linear relationship between vertical speed indicator moment beginning to touch the ball of the arms and the level of harmonic capacity to sample



Form (2): the error rate for the vertical speed indicator moment beginning of deception shareholder in the level of harmonic capacity to sample

Evident from the table (7) and shapes (1), (2) that the vertical speed indicator to point the body's center of gravity for a moment beginning to touch the ball of the arms is more indicators contribute to the level of harmonic capacity under terms of percentage contribution to 93.91%.

And attributed Find That result that amounts speeds vertical center of gravity body year amounts incrementally positive until the moment of the beginning of touching the ball of the arms, and from the moment of the end of the follow-up of the arms to the moment of touching the front foot of the land takes on the values in decreasing reverse movement and this is what explains the importance of this indicator, as well as that the movement of the arms initially take a course directly vertically followed a path horizontally, and the player must perform these tracks and quickly to control the ball and accurately directed.

In this regard, **Mustafa (1999)** that the performance of this skill successfully must start

player an individual body parts to the highest once touching the ball surface forearms, begins to flex knees and followed hip and upper part of the body forward and higher, and then moving arms of the shoulder without co actual and during individual trunk, and determined the amount of space between the arms and torso at the moment of receiving the ball on after near the player from the network whenever the player is close to the network increased height arms up and are playing the ball as an area of the surface of the forearms, and supports individual parts of the body on the strength and the distance you want to pass and guiding the ball to this stage is called from the main stage performance.

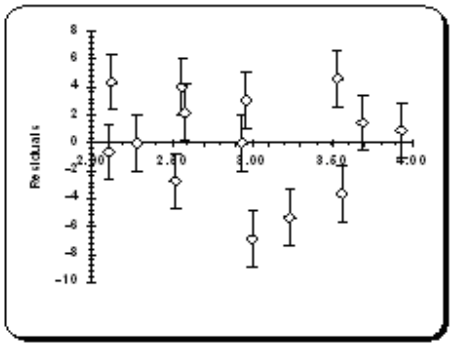
Compounding the importance of this indicator high correlation coefficient between him and the level of harmonic capacity where he achieved coefficient of $ 0.969 and thus can use this indicator alone in building predictive mathematical equation suitable proficiency in evaluating the effectiveness of performance skills in terms of the level of harmonic capacity of the player as follows:

The level of harmonic capacity = 1.02 + (1.715 × vertical velocity of the body's center of gravity point the moment of the beginning of touching the ball of the arms).

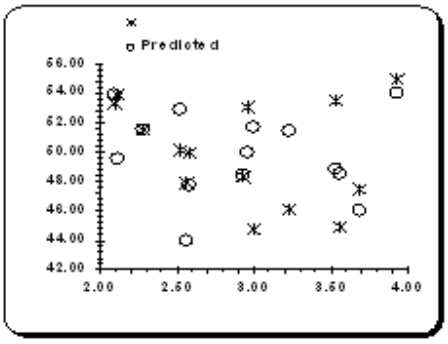
Where crosses the first part of the equation for the level of capacity harmonic players destined degrees standard, while crossing the second part on the effectiveness of mastery performance skills to receive transmissions using a single indicator which (vertical velocity of the center point of gravity body moment beginning to touch the ball of the arms).

As shown in Table (7) and shapes (3), (4) that the index of the angular velocity of the elbow joint moment beginning to touch the ball of the arms, the high proportion of contribution effectiveness indicators mechanical skill receiver transmitter, in the level of capacity harmonic of 93.91% to 95.98%, an increase of $ 2.07.

Due researcher importance of this indicator when performing skill in question, that the player when deciding process performance reception of the ball, usually starts with an individual arms and then followed a few moments early move front foot so that it looks moments as if they were simultaneous, and when the performance touched the ball to the surface of forearms, you must these fast and smooth movement, and therefore the player from the moment of moving the front foot elbow has gained considerable speed angle to achieve the purpose of the reception process.



Form (3): the level of harmonic capacity to sample and predictive in terms of realism Index angular velocity of the elbow joint moment beginning to touch the ball for arms

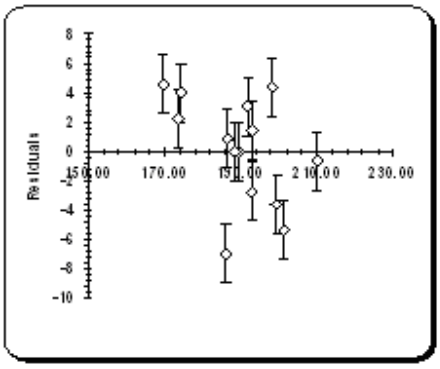


Form (4): the error rate for the index angular velocity of the elbow joint moment beginning to touch the ball for arms shareholder in the level of harmonic capacity to sample

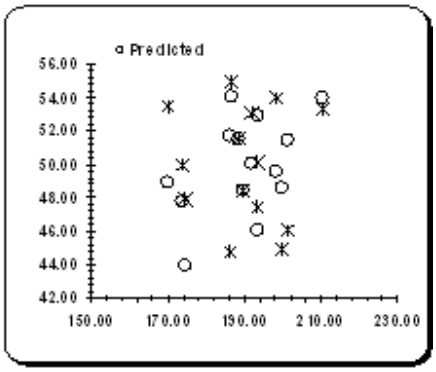
And agree this result with what he referred **Farid A (2006)** that at the end of the preliminary stage to receive the transmissions player must take into account speed in decision favorable situation of the arms to the receiver through speed annexation forearms to each with a hand within other so the moment of preparedness to receive ball, and once the arrival of the ball touching the surface of the forearms player begins to move the arms fast enough unfolded elbows and shoulders even easier for the player to defend against strikes transmission and then success in guiding the balls to prepared.

From here clear to the researcher is of the utmost importance in terms of this indicator can be used to evaluate the effectiveness of mastering the skill performance for the reception of transmission capacity in terms of harmonic player using the following predictive mathematical equation:

The level of harmonic capacity = 0.97+ (1.488 × vertical velocity of the body's center of gravity point moment beginning to touch the ball for arms) + (2.229 × angular velocity of the elbow joint moment beginning to touch the ball for arms)



Form (5): the level of harmonic capacity to sample and predictive in terms of realism index horizontal speed the moment of the end of the follow-up of the arms



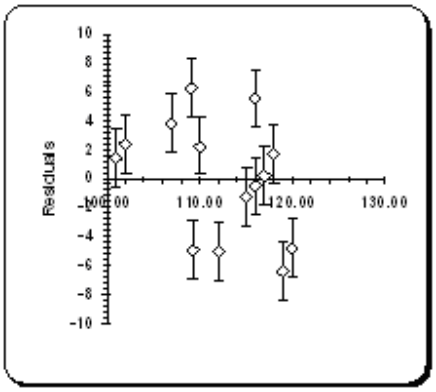
Form (6): the margin of error for the index horizontal speed the moment of the end of the follow-up of the arms shareholder in the level of harmonic capacity to sample

As shown in Table (5) and shapes (5), (6) that the speed indicator horizontal moment end up the arms, raise the proportion of the contribution of indicators effectively mastering performance skills to receive transmissions, in the level of capacity harmonic of 95.98% to 97.19%, an increase of $ 1.21%

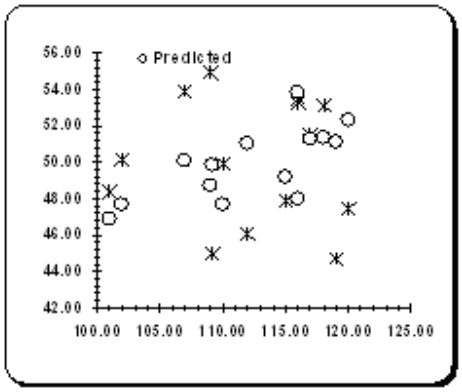
Where noted researcher in the performance of the players sample the skill receiver transmitter especially during the process of follow-up (end touching the arms of the ball) a steady increase in speeds and horizontal due researcher to the fact that the player will have to get rid of the ball after touching and be the goal of this stage is to emphasize directing the ball to the player prepared the aim of receiving transmissions not only defense and rollback and prevent the balls from falling on the ground, but also the exact direction of those balls in preparation to prepare for the attack.

Hence, the researcher realized the importance of this indicator during the performance of the skill in question, and this makes the search reassuring to the possibility of the use of this indicator in evaluating the effectiveness of mastering the skill performance to receive the transmission capacity in terms of harmonic player using the following predictive mathematical equation:

Level capacity harmonic = 0.15 + (0.186 × vertical velocity of the center point of gravity body moment beginning to touch the ball of the arms) + (0.240 × angular velocity of the elbow joint moment beginning to touch the ball of the arms) + 0.231 × speed horizontal moment end up of the arms).



Form (7): the level of harmonic capacity to sample and predictive in terms of realism index horizontal displacement of the front foot touching moment of Earth



Form (8): the margin of error for the horizontal displacement index touching moment Earth's front foot shareholder in the level of harmonic capacity to sample

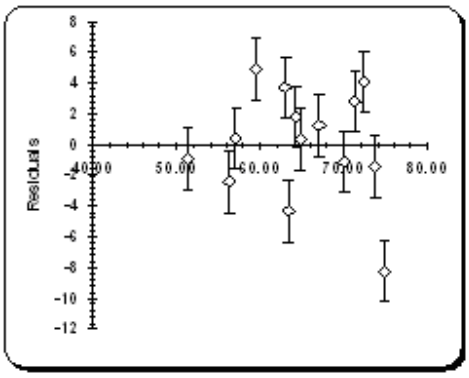
As shown in Table (7) and shapes (7), (8) that the index offset horizontal moment touch front foot to land, raise the proportion of the contribution of indicators effectively mastering performance skills to receive transmissions, in the level of capacity harmonic of 97.19% to 98.09%, an increase of $0.90%

The researcher finds it logical consequence due to the compatibility with the reality of performance during the course of the skill in question, as it requires performance often movement appeal, so as to cut the distance between the player and the fastball, so the defender moving the front legs horizontally - to shorten the distance - with the help push the forces of man background to give front foot speed required, to cut the largest possible distance between him and the ball, and so we find that for a moment touch front foot to land has achieved the highest values of offsets horizontal, where the player when performing movement appeal at the end of skill reception transmission must reach the widest possible breadth and depth without the right situation has mechanical and without feeling stress or tension, and this is what makes the researcher assured to use this indicator in evaluating the effectiveness of mastering the skill performance to receive the transmission capacity in terms of harmonic player using the following predictive mathematical equation:

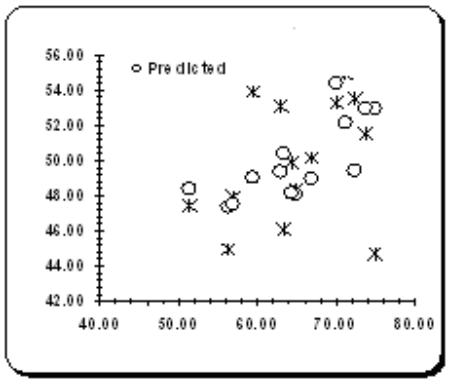
Level capacity harmonic = 0.15 + (0.202 × vertical velocity of the center point of gravity body moment beginning to touch the ball of the arms) + (0.202 × angular velocity of the elbow joint moment beginning to touch the ball of the arms) + 0.227 × speed horizontal moment end up of the arms) + 0.003 × offset horizontal touching moment forefoot of the Earth).

As shown in Table (7) and shapes (7), (8) that the index change the angular shoulder joint moment beginning to touch the ball of the arms, raise the proportion of the contribution of indicators effectively mastering performance skills to receive transmissions, in the level of capacity harmonic of 98.09% to 98.82% to,0.73%.

Noting the table (4), we find that the amount of change the angular shoulder joint moment end touched the ball of the arms was 97.89 degree angle, where the researcher believes that this moment of important moments of performance art when performing skill receive transmissions in general, as this index is particularly about the degree arms extended in the direction of the ball sent, and this tide in the arm achieves technical objective of the process of reception is precision-guided the ball in the desired direction, where it refers **Farid *et al.* (2006)** that not everyone arms and drape player of the annexes while touching the ball leads to flight back, and the lack of individual arms slightly higher level than shoulder level makes flying a short ball vertically.



Form (9): level of harmonic capacity to sample realistic and predictive index in terms of change of shoulder joint angular moment beginning to touch the ball for arms



Form (10): error rate of change indicator of shoulder joint angular moment beginning to touch the ball for arms shareholder in level of harmonic capacity to sample

Adding to the importance of this indicator that correlation between him and the level of capacity harmonic player reaching this relationship 0.905 a positive correlation express that the more capacity harmonic player increased degree ability to extend his arm more performance and this, of course, need the capabilities of consensual private make the player can understand the timing of the move to receive the ball sent when responding.

From here illustrated the importance of this index which can be used in evaluating the effectiveness of mastering the skill performance to receive the transmission capacity in terms of

harmonic player using the following predictive mathematical equation:

Level capacity harmonic = 0.19 + (-0.060 × vertical velocity of the center point of gravity body moment beginning to touch the ball of the arms) + (0.813 × angular velocity of the elbow joint moment beginning to touch the ball of the arms) + 0.204 × speed horizontal moment end up of the arms) + -0.111 ×the horizontal displacement of the front foot touching moment of the land) + (0.354 × angular change of the shoulder joint moment beginning to touch the ball of the arms).

Where crosses the first part of the equation for the level of capacity harmonic volleyball players destined degrees standard, while crossing the second part of the equation on the effectiveness of perfecting performance skills to receive transmissions using five indicators are (vertical velocity of the center point of gravity body moment beginning to touch the ball of the arms, and the angular velocity the elbow joint moment beginning to touch the ball of the arms, and horizontal speed the moment of the end of the follow-up of the arms, and the horizontal displacement of the front foot touching moment of the Earth, and angular change of the shoulder joint moment beginning to touch the ball of the arms).

Conclusions

1. The values of the level of harmonic capacity tests described in the table (1) important indicators suitable capacity in evaluating the level of interoperability of the volleyball players.
2. The researcher found a set of mechanical variables serve as indicators to evaluate the effectiveness of mastering the skill performance to receive the transmission capacity in the light of the level of interoperability of the volleyball players.
3. According to the results of the analysis rationale for declining to multiple indicators Albyumkanikih skill receive transmissions in volleyball and their relationship to the level of capacity harmonic volleyball players (predictive model final), could be reached to five variables serve as indicators to evaluate the effectiveness of perfecting performance skills to receive transmissions, which are as follows:

- Vertical velocity of the center of gravity of the body for a moment beginning to touch the ball for arms 0.969
- Angular velocity of the elbow joint moment beginning to touch the ball for arms 0.952
- The horizontal speed of the body's center of gravity for a moment the end of the follow-up of the arms 0.942
- The horizontal displacement of the body's center of gravity for a moment touch the front foot of land 0.917
- Angular change of the shoulder joint moment beginning to touch the ball for arms .905

4. Predictive equations can be used to evaluate the effectiveness of mastering the skill performance to receive the transmission capacity in the light of the level of interoperability of the volleyball players.

Recommendations

1. The need to use trained motor analysis on an ongoing basis to determine the status of volleyball players and develop skills through the fine details of which are difficult to observe with the naked eye.
2. Must be borne in mind when teaching skill Receive transmission volleyball dynamic elements that concern the results proved to improve this skill of the players.
3. Guided by the values of the average variables Albyumkanikih that reached-by comparing them with the same high levels of variables) as leading indicators directed to evaluate the effectiveness of mastering the skill performance to receive transmissions in volleyball.
4. Guided relational relations of Albyumkanikih indicators research topic and the level of harmonic capacity building and training programs for rationing volleyball players.
5. Focus on Albyumkanikih indicators important contribution in the level of harmonic capacity of the volleyball players during their training, taking into account the priority of these indicators during the development of the capacity of each of these indicators.
6. Application predictive regression line equations learned practically on Albyumkanikih indicators contributing to the level of harmonic capacity of the volleyball players periodically in order to get closer to ideal level of performance.

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