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The relative contribution of physical patterns to the digital level of the long jump effectiveness of female students of sports activity

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***Abstract*---**The great development of the event in world sport, in which the follower of its career can note that there is a lot of scientific research that comes out to us with results and recommendations working to develop the digital level, and this development is greatly highlighted in athletics events where thedigital achievement reached a high level appeared through the performance provided by athletes during the world championships Physical measurements are objective measurement methods used to measure body composition as well as changes in muscles as a result of athletic performance, and they give us the possibility of determining the level of physical growth and its characteristics under the influence of practicing sports activities, and physical measurements play an important and complementary role for the rest of the specifications possessed by thestudent such as physical specifications and skill specifications ... Etc., since each type of sports activity has special physical specifications that must be described to a student in order to be suitable for the requirements of the sports activity practice and achieve a high digital level in that activity, because physical measurements play a big role in the success of the motor performance of a student and be superior in sports activities based on the appropriate synthesis of the body of thestudent To perform the required work, physical measurements are important in choosing the right type of sports activity. The physical pattern is a quantitative identification of the three original elements that determine the outer shape of a person

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Keywords---contribution ratios, body patterns, long jump.

Introduction to and importance of research

The great development of the event in world sport, in which the follower of its career can note that there is a lot of scientific research that comes out to us with results and recommendations working to develop the digital level, and this development is greatly highlighted in athletics events where thedigital achievement reached a high level appeared through the performance provided by athletes during the world championships Physical measurements are objective measurement methods used to measure body composition as well as changes in muscles as a result of athletic performance, and they give us the possibility of determining the level of physical growth and its characteristics under the influence of practicing sports activities, and physical measurements play an important and complementary role for the rest of the specifications possessed by thestudent such as physical specifications and skill specifications ... Etc., since each type of sports activity has special physical specifications that must be described to a student in order to be suitable for the requirements of the sports activity practice and achieve a high digital level in that activity, because physical measurements play a big role in the success of the motor performance of a student and be superior in sports activities based on the appropriate synthesis of the body of thestudent To perform the required work, physical measurements are important in choosing the right type of sports activity. The physical pattern is a quantitative determination of the three original elements that determine a person's external shape, expressed in three consecutive numbers, the first of which refers to the element of obesity or obesity, the second to the muscle element, and the third refers to the element of thinness. (Hassanein, 2000, p. 80) Thephysical pattern refers to the overall physical construction without going into details in terms of physical measurements, and it determines the shape of the body on the basis of the dominant type of different body tissues, namely fat, muscular, slim, and attention to the pattern and division of the human body is due to the fact that the age, grades andpatterns of time hence the importance of research in highlighting andthe role played by the physical construction and determining the proportions of its contribution as the importance of this shows the importance of this for the effectiveness of the long jump. The long jump is one of the activities of jumping in athletics and is characterized by being one of the competitive games exciting and requires physical abilities and special physical specifications as well as technical performance with high skill enables the jump to perform well to achieve the best digital level, and this requires trainers and specialists to take into account the priority of the contribution of physical construction in the long jump both according to the percentage of its contribution to the digital level.

As for the problem of research and through the researcher's knowledge of athletics events, especially the effectiveness of the long jump for female students, I noted that there is no reliance on the appropriate physical specifications in the selection for this event as well as the lack of focus on special physical abilities, which contribute to improving the level of skill performance, and classifications according to physical patterns (fat - muscular - skinny) are methods to help the

educational and teaching process in sports education as it is a tool in the hands of the teacher to enable him to qualify the teaching process by standing on The reality of the physical patterns of learners and what their performance and ability inathletics activities and the skill of the long jump in particular and determine the percentages of contribution in the digital level so that trainers and specialists can identify them and choose the appropriate physical specifications and benefit from them in the preparation of training programs. BTo identify the physical patterns and digital level of female students practices for sports activity.

Learn about the relationship between physical patterns at the digital level of the long jump effectiveness of female students practices for sports activity. Identify the contribution ratios of body patterns at the digital level to the effectiveness of the long jump of female students practices for sports activity. As for the fields of research: the human field students of the fourth stage / Faculty of Physical Education and Sports Sciences University Diyala Field Temporal
(From 2 / 1/ 2022 to 17 / 2 / 2022)
Spatial field: Al-Fassalja Laboratory, Al-Jamnastak Hall, Martyr Mustafa Hall, Arena and Field Track at the Faculty of Physical Education and Sports Sciences / Diyala University

Research methodology and field procedures :
The descriptive method has been used in a survey method and correlational studies to suit the nature of the problem to be studied, where "correlational methods are used to the extent to which two variables are linked or in other words to what extent changes are consistent with the factors in another factor " (**Dio Boldb van Dallin, 1985, p. 348)** and the descriptive approach is defined as "the method aimed at collecting data to try to test assumptions or answer questions regarding the current or current situation of research sample members ." **Allawi and Rabet, 1999, p.[139]**

The research community and its sample:
Theresearch community is one of the fourth-stage students of the Faculty of Physical Education and Sports Sciences / Diyala University for the academic year 2021-2022 and the number of female students was 61, while the research sample numbered (61) and constituted a percentage (100%) of the community of origin.
- Means of collecting information:
- Arab and foreign sources. registration forms and data dumping.
Devices and tools:
- Korean-made Pentium 4, Number 1. Stopwatch, Diamond type, Japanese-made time measurement. Handmade cartoon calculator, type (Ucenko), Chinese-made. A tissue tape, a 30 m. Fox whistle, two chairs.
Identify the variables researched
Determining the physical patterns offemale students for the effectiveness of the long jump:
To find the physical pattern, some of the following physical measurements were relied upon: (Abdel Fattah and Hassanine, 1998, p. 306)
1. Length in centimeters.
2. Weight per kilogram.
3. Height rate - weight (BondRa's guide**).**
4. Thickness of skin folds from the following areas :

First: Behind the humerus in millimeters: - The measurement is taken from the area of the triglyceride muscle behind the right humerus from the middle of the distance between the bump exceptthe otherme and the iliac protrusion, the elbow joint must be limited and the arm is suspended and relaxed next to the body this skin fold is vertical. (Hassanein, 1995, p. 136)
Second: The bottom of the board in millimeters: - The measurement is taken from the bottom of the angle of the right plate bone from 1-2 cm, and in two directions, one tilted down and the other out at an angle of 45 degrees, this leather fold is tilted.
Third: The highest protrusion of the iliac bone in millimeters: - The measurement is taken from the area above the front protrusion of the iliac bone (right) and on the side front line of the armpit with a slanted line down and inward at a 45 degree angle, and the operator holds the fold of the skin from the bottom of the mark placed by the pen of the fluester and then pulls it out, and then puts the jaws of the thickness above the longitudinal axis of the leather fold. (Radwan, 1997, p. 94)
Fourth: the leg quail per millimeter (from the human surface): - The measurement is taken from the human side at the level of the largest circumference of the right leg and this fold is vertical, knowing that the position of the man must be bladder at an angle of 90 degrees where the examined student sits on the node, as well as taking the measurement from the right side to the nearest (0.5) mmKirkendall, DR K.1987, p186

5. Cross-measurements include:
First: The width of the attachment in centimeters: Is measured by the examination to lift his right arm to the horizontal level, and then bend the attachment at a angle of 90 degrees, so that the back of the hand outside in the face of the measuring man is placed the arms of the sliding man on both the protrusion above the brutal mouth and the protrusion above the human mouth and the arms of the sliding man up so that the existing corner of the attachment is divided in half, and the recording is made to the nearest (0.5) mm. (Radwan, 1997, P.148.)
Second: The width of the knee in centimeters: - from the position of sitting and the man bent at an angle of 90 degrees at the knee joint where the distance between the maximum human face and the brutal maximum face of the femur summits is measured, and is recorded to the nearest (0.5) mm.

6. Peripheral measurements:
First: The circumference of the humerus in centimeters: - The measurement and the arms are hanging to relax from the middle of the distance between the point of the final bump and the end of the brutal edge of the bone of the humerus, where the mark of measurement and arm is bent and the palm at an angle of 90 degrees and the palm of the hand facing up.
Second: The circumference of the leg quail in centimeters: - The measuring tape is placed around the maximum perimeter of the leg and this can be obtained by moving the tape up and down until we get the largest perimeter of the required measurement.

First: Estimating the fat pattern: -
1. The thickness of the skin thynae is measured for the regions:-

Behind the bone. Under the board. The highest protrusion of the iliac bone. Leg quail.
Collect the thickness of the first three skin folds without the sum of the three areas in the rectangle. Correct the total measurements of the three skin folds according to length (Height corrected (skin folds) according to the following equation :

$$\frac{170.18}{\text{Length}}\ \text{by}$$

Total thickness of skin folds in the three areas ×

In front of the fat pattern on the right three horizontal rows of numbers are searched in these three rows for the nearest number of the total thickness of the three skin folds (after correction) mentioned in the previous step and put a circle with a pen around the number that we will find through the numbers in front of the three horizontal rows (upper limit, average limit, minimum) of numbers. Below the three rows mentioned above is a fourth row that represents the final outcome of the fat pattern, and after determining the number in the previous step we land vertically on the final score row of the obesity component to put a circle around the number that corresponds directly to us and thus we have obtained an estimate of the fat pattern.

Second: Estimating muscle pattern :

Recording measurements of the length and width of the elbow, the width of the knee, the circumference of the humerus and the circumference of the leg quail in the designated areas, namely the left side of the average part of the muscle pattern. Correction is performed on peripheral measurements with the thickness of the skin folds as follows:

Correction 1:
The circumference of the humerus - the thickness of the leather fold in the area behind the humerus, where the value of the thickness of the leather fold is converted from one millimeter to one centimeter by dividing it by (10) and the result is recorded in the designated place.

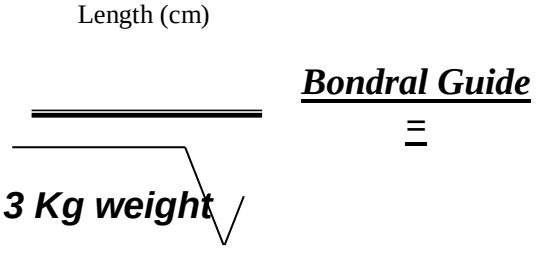
Correction 2:
The circumference of the leg thickness - the thickness of the leather tuck in the area of the leg barometer and the conversion of the value of the thickness of the leather tuck from one millimeter to one centimeter by dividing it by (10) and recording the result in the place allocated to it. In front of the muscular pattern on the right are five horizontal rows of numbers.
The first row is for length.

The length of the laboratory is measured and an arrow is marked at the top of the column that contains the length of the person or the nearest length.
The second row is dedicated to displaying the attachment
The width of the humerus is measured, and a circle is placed in the opposite row on the nearest measurement number
The third row is dedicated to the knee display.
The width of the femur is measured and a circle is placed in the opposite row on the nearest measurement number.
The fourth row is dedicated to the vicinity of the humerus.
After correction, a circle is placed in the opposite row on the nearest measurement number.
The fifth row is dedicated to the perimeter of the leg.
After correction, a circle is placed in the opposite row on the nearest measurement number.
Columns are treated only and not with digital values according to the average deviation of the values that have been placed in circles of length (presentations and oceans) of the value of the above length column in the arrow and are as follows:
Deviations of values from the length column (arrow) to the right represent positive deviations and deviations on the left represent negative deviations.
Calculating the arithmetic of deviations, symbolized by (d).
Using the following equation, the value of the muscle pattern is obtained.

$$\text{Muscle pattern} = \left(\frac{\quad}{8} \right) + 4$$

We place a circle around the value derived from the previous equation in the sixth horizontal row that represents the muscular pattern, and if we do not find the value accurately we put the circle around the nearest value.

Third: Estimating the slim pattern:
Record the weight value in kg in the section dedicated to the slimming component.
Record the value of the height-weight rate.



The result is recorded in the rectangle assigned to it on the side.
We place a circle around the nearest value of the output, the rate of length - weight in one of the three rows located right of the height and height- weight values.

We land vertically below the value specified in the previous step on the fourth row, which is the end result of the slim pattern and circle around the value that we correspond to, which represents the slim pattern.
The choice of hit carter method was based on the physical pattern because it is a method commonly used for its accuracy in giving results and objectivity, as well as its ease of use and clarity, as we need to take weights and lengths for individuals and some physical measurements and the data values obtained through the work of the special style form, for each individual, so I applied this method in more than one study.

Long jump skill test

- Test name: Long Jump (Ali Samoum, Sadiq Jaafar, 2020, 75)

Purpose of the test: to measure achievement
The necessary tools: a suitable place for jumping includes the hole and the jogging field, measuring tape, Burke, video camera to photograph the artistic performance.
Description of the performance: From the quick run (full approach distance) the player starts performing and then jumping and landing both men in the drop hole and is given three attempts per player and a rest of 5 minutes between one attempt and another.
Registration: The measurement is from the upgrading plate to the nearest effect left by the body towards this line and the best attempt is calculated and measured (m/cm)

- Reconnaissance experiment:

The exploratory experiment was conducted on 2 January 2022 in the Hall of Martyr Mustafa, The Al-Fassalja Laboratory and the track of the Faculty of Physical Education and Sports Sciences - Diyala University on the same number (6) female students from the third stage and the aim was:
Explain how to take body measurements and test the long jump under study for the assistant team, answer their questions and see how valid the devices used are.
As well as knowing the constraints you may face in the main experiment for the purpose of avoiding them
The main **experience :**
The main experiment was conducted in The Martyr Mustafa Hall, Al-Fasslja Laboratory, Arena and Field Track at the Faculty of Physical Education and Sports Sciences / Diyala University on 11 January 2022 at 10 a.m. where body measurements were made and skilled selection was made with the assistant team.
Statistical means:
The statistical bag of social sciences (spss), computational medium extraction, standard deviation, Pearson link factors, and simple and multiple linear slopes were used in stepwis.

Presentation and discussion of results

View the results of body patterns and long jump:

Table (1) Shows descriptive statistics of body measurement variables

Variables	Arithmetic medium	Standard error	Broker	Standard deviation	Convolution	Flattening	Highest value	Low value
Chubby style	3.918	0.082	4.000	0.640	-.963	.676	2.00	5.00
Muscle pattern	4.180	0.076	4.500	0.592	-1.183	.537	2.50	5.00
Slim style	2.049	0.107	2.000	0.835	.527	-.387	1.00	4.00
Long jump skill	2.188	0.058	2.000	0.451	.087	-.531	1.00	3.00

View the results of the correlation matrix between body patterns and long jump skill:

Table (2) Shows the matrix of correlation between body patterns and long jump skill

Styles	Statistical treatments	Fat jump	Muscle jumping	Slim style	Long jump skill
Chubby style	Link coefficient	1	.293*	-.187	-.152
	Error rate		.022	.149	.241
	Sample	61	61	61	61
Muscle pattern	Link coefficient	.293*	1	-.001	.361**
	Error rate	.022		.992	.004
	Sample	61	61	61	61
Slim style	Link coefficient	-.187	-.001	1	.347**
	Error rate	.149	.992		.006
	Sample	61	61	61	61
Long jump skill	Link coefficient	-.152	.361**	.347**	1
	Error rate	.241	.004	.006	
	Sample	61	61	61	61

View multiple link results and selection factors forphysical measurements:

Table (3) shows the model of contributing physical patterns, multiple link coefficient values and selection factors

Model Summary					
Model	Link coefficient Multi-R	R Square selection coefficient	Adjusted R Square	Estimates line	Durbin-Watson
Muscle pattern	.361a	.131	.116	.4239	1.570
Slim style	.501b	.251	.225	.3967	
A. Predictors: (Constant), Muscular Style					
b. Predictors: (Constant), slim style, muscular style					
c. Dependent Variable: Long Jump Skill					

Vi the results of the multi-slope contrast analysis to examine the quality of conciliation and the multiple linear regression model between body patterns and long jump skill:

Table (4) Multi-slope variance analysis to examine the quality of reconciliation shows the multiple linear regression model between body patterns andlong jump skill.

ANOVAa							
Model	Source of contrast	Total deviation boxes	Degree of freedom	Average squares	Fvalue	Sig.	Statistical significance
1	Between the group.	1.593	1	1.593	8.863	.004b	Moral
	Inside the group.	10.601	59	.180			
	Total	12.193	60				
2	Between the group.	3.064	2	1.532	9.734	.000c	Moral
	Inside the group.	9.129	58	.157			
	Total	12.193	60				

A. Dependent Variable: Long Jump Skill
b. Predictors: (Constant), Muscular Style
c. Predictors: (Constant), slim jump, muscular pattern

Table 5 shows the values of the fixed limit and the tendency (effect) between the skill of the long jump and the physical patterns and the level of their true significance and the indication of differences.

Coefficients'									
Model		Unstandardized Coefficients		Standardized Coefficients	t value	Sig.	Correlations		
		Parameter value	Standard error	Beta			Zero-order	Partial	Part
1	Fixed limit	1.037	.390		2.657	.010			
	Muscle pattern	.275	.092	.361	2.977	.004	.361	.361	.361
2	Fixed limit	.651	.386		1.685	.097			
	Muscle pattern	.276	.087	.362	3.185	.002	.361	.386	.362
	Style Afor skinny	.188	.061	.347	3.058	.003	.347	.373	.347

It is clear from the previous presentation of statistical indicators and indications that there is a high moral contribution ratio to the muscular and slim pattern effectively long jump, and that the physical pattern is the general form of the body determined by a set of measurements, and the overall shape of the body is a quantitative identification of the three elements (chubby/mectng, muscular/athletic, slim/skinny/skinny), (Radwan, 1997, p21) Through which the external shape of the individual is determined, and the physical pattern has an impact on the performance of these skills, as its performance is influenced by the physical pattern and in different degrees, excess weight requires more effort during movement because the player or player always moves and carries more weight than his energy, but skinny may be the structure of his body weak which negatively reflects on his performance of movements, as the muscle pattern is characterized bybeing long or medium height, muscle strength and the expansion of the rib cage with long bones Slim in the waist and muscles and arms and legs. (Resan Kharibat1997, p. 251)

"Weight gain resulting from the accumulation of grease in the body is a negative factor for physical performance, especially in activities where the body is carried,

such as walking and jogging," he said. (Zain al-Harbi, 1997, p. 245) this may justify the finding that the slim muscular and muscular component is one of the best physical patterns contributing to the effectiveness of the long jump.

Therefore, physical patterns are considered to be determinants of performance in all sports activities" (Allawi and Jalal, 1978, p. 480) and mentions (Mohammed Sobhi Hassanein and Mohammed Abdul Salam Ragheb, 1995) that the physical pattern has a role to play Great in tests or sports based on strength and speed requirements, taking into account that the most appropriate physical patterns of long jump is the muscular component, and that the owners of the slim component are characterized by speed in motor performance and accuracy in movements while characterized by The owners of the muscular component with the power of performance (Hassanein and Abdeslam, 1995, p. 215)

Thedetermination of the physical pattern is done by the weight and height factors, and therefore the morale of the relationship here enhances the stability and credibility of this fact, y. The pattern of the body, which is the result of weight and height and contributes directly to performance, increased weight in the fat pattern throws on the components of the motor system of additional muscles and bones and leads as a result to poor motor performance, and in contrast, the weakness of the physical composition of the slim pattern represents a weakness in the production of muscle strength, all these factors It helps to cause injuries and people with thinness are also exposed to injuries due to the significant lack of muscle and fat ratio of their bodies where they work to protect the body and relieve external shocks on its various parts, which reduces the chances of injury" (Abdel Fattah and Ahmed Nasreddine Sayed, 1994, p. 37)

Conclusions and recommendations:

1- Physical patterns are associated with a morally significant relationship in the performance of the long jump skill
2- Muscle style contributed to the performance of the long jump skill with the highest contribution rate and the slim pattern contributed a high percentage to the performance of the long jump skill.
3- The fat pattern has not been associated with a morally significant relationship in the performance of the long jump skill.

Recommendations:

1- The need to be guided by measurements and physical patterns that have a high contribution to the education and training of the long jump skill of female students
2- The need for trainers to adopt the contribution ratios that came out of the study and adopt them in the educational and training units of the students
3- The importance of conducting similar research on determining the physical patterns of female students.
4- Attention to the physical measurements researched as it is one of the indicators contributing to the process of selecting female students to participate in local and Arab competitions

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