

## Harmonic abilities as an indicator to start teach some tennis skills

**Hisham Mohamed Abdel Halim**

*Assigned teacher at the Department of Curricula and Teaching Physical Education (specializing in teaching racket games), Faculty of Physical Education - Assiut University*

### Abstract

*The age of practicing sports activity in general is one of the important problems facing those interested in the field of sports training, as each activity or sport has special requirements that are unique to it from the rest of the other games. Each individual has special abilities and preparations, and if the individual has the capabilities and preparations that are consistent with the requirements of sports activity. This helps the coach to reach the players to the highest levels of sport in addition to saving effort, time and money. The aim of the research: is to reveal the most appropriate age stage to start teaching basic skills in tennis in light of the levels of combinatorial abilities for children aged (6-9) years. The researcher used the descriptive approach (survey studies) for its suitability to the nature of this study. The research community included: Children from the age of (6 to 9) years in Assiut Governorate. And the research sample was chosen: by a random, intentional method, and it consisted of (180) children who practice tennis at the Public Service Center in the Olympic Village at Assiut University. The most important results were: First: There are significant differences between the stages (6-7) years, (7-8) years, (8-9) years in the level of performance of combinatorial abilities. Second: The age group (6-7 years) is the appropriate age to start practicing and teaching some tennis skills.*

### Introduction and research problem:

Tennis is one of the most important racket sports, which is characterized by continuous dynamism through the different positions of the player throughout the relatively large court, which requires special abilities that distinguish it from other sports, which, if available to the youth, would have given him the opportunity to excel in this sport. (9 : 111)

During the past few years, tennis occupied a large media space, whether in the Arab world or the world, as people knew and loved it and followed the news of its champions through the scientific fields of this sport. ( 13 : 1 )

Tennis is one of the World Olympic Games, and it is called in English Tennis Sport, and it is a type of international sport that is practiced by two people inside a closed or open court, where each of them owns a racket that is held by one of the left or right hands and individually used to hit the ball against An individual competitor or a team of two people in pairs, and the tennis court consists of two sides, the first side, with the player and the first competitor, and the opposite side, with the player and the second competitor, separated by a net in the middle of the court. The network .

And tennis is one of the sports with simple rules that can be practiced by all levels of society and for all different ages, whether for men or women, in addition to people who are unable to walk and who use wheelchairs with special needs or people who have mobility and running problems, Tennis helps to strengthen the arms and legs .

It is one of the sports that gives its practitioners activity and vitality and maintains public and private physical fitness, and it can be learned at any time, whether for males or females. In addition to free competition in matches, it improves the psychological and physical condition of its practitioners. Tennis matches are always characterized by being highly competitive, as it shows the true ability The player in terms of physical, skill, tactical and mental. ( 14 : 17 )

The process of preparing tennis juniors, like other juniors in other group activities, requires

an integrated preparation, physically, skillfully, psychologically, and planningly, in a way in which these aspects overlap to affect each other. It is affected by it, so none of them should be neglected, especially since tennis requires the practitioner or player to have a high degree of physical and skillful performance so that he can keep pace with the continuous development of the game.

Indicate that harmonic abilities are general kinetic and psychological conditions for sports achievement. An individual can control motor performance in all sports activities. The requirements of sports performance are determined by the amount of experience of the individual in the accuracy and mastery of motor skills, and the harmonic abilities differ from each other in their dynamic direction and level. Harmonic abilities do not appear as a single ability, but are always linked to other conditions of athletic achievement such as physical abilities and skill and scheming performance, as they are often linked to each other. The general required for motor performance to achieve motor skills. The harmonic abilities differ from skillful performance in that they are considered as a requirement and condition for several motor operations, while motor skills are to solve a specific motor duty.

(1 : 12) (12 : 188) (8 : 122)

**Dlawer Karim Omar (2014 AD)**, quoting Muhammad Sobhi Hassanein and Kamal Abdel Hamid, points out: The harmonic abilities are the main component to reach the athlete to the sports format, as it is the backbone for the development of technical skills specific to each sport. Performing the movement in its proper framework in terms of force, speed and time required for it. ( 13 : 2 )

Compound harmonic abilities represent an essential link of the physical abilities that affect the speed of development of sports performance, where guidance must be given to these compound abilities because of their effective and joint impact with other physical abilities on performance. (16 : 217)

Also, the early detection of talents as an indicator to start practicing and teaching basic skills in Racquet games (tennis) works to nurture talents, ensure their advancement at the age of the championship, and direct sports education and training processes towards the vocabulary of sports excellence .

Therefore, the researcher will try to determine the appropriate age stage in which to start teaching some basic skills in tennis, and the Egyptian Tennis Federation, represented in its regions in the governorates, can start holding competitions for age groups starting from this stage to increase the training age that may lead to a higher technical level for them In the future, if they start and regularly attend education, training and competition through objective codified educational or training programs designed according to scientific foundations, in the hope that they will reach high sports levels .

#### **Importance and need of the study :**

##### **First: The scientific importance is represented in the following :**

- 1- Those in charge of teaching tennis skills benefit from the special skill and physical tests to measure the harmonic abilities of tennis juniors .
- 2- This study is one of the scientific attempts that serve the sports field in general and tennis in particular .

##### **Second: The practical importance is represented in the following points :**

- 1- Determining the special physical tests for beginners and junior tennis .
- 2- Determining the special harmonic abilities of beginners and junior tennis .
- 3- Directing the attention of those in charge of tennis to the importance of using tests as a

measure to know the levels of beginners and juniors, the extent of their learning of skills and their progress .

### **Objective of the study :**

Detection of the most appropriate age stage to start teaching basic skills in tennis in light of the levels of combinatorial abilities for children aged (6-9) years .

### **Study questions :**

- 1- Are there any statistically significant differences between the three age groups (6-7), (7-8), (8-9) in the level of harmonic abilities related to tennis for the sample under investigation ?
- 2- Is there a statistically significant correlation between the harmonic abilities and some anthropometric variables for the sample from (6-9) years ?

### **The Definition of the study:**

#### **1- Harmonic capabilities:**

They are physical abilities that are directly related to compatibility, affect and are affected by it, and accordingly are considered basic capabilities for sports activity in general

#### **2- The ability to determine the mode :**

It is the athlete's ability to appreciate the changing position of his body and other variables such as the ball and other people (colleagues and competitors) .(

#### **3- The ability to balance movement :**

It is the ability of the athlete to maintain his body in a certain position or to restore this position in the event of a deviation from it .

#### **4- The ability to react quickly :**

It is the athlete's ability to quickly and correctly execute the movements resulting from a specific signal, or the athlete's ability to respond quickly and correctly to a sudden change of situation .

#### **5-The ability to connect :**

It is the athlete's ability to synthesize total movements from partial movements and compound movements in individual matches and ball games from individual technical skills. This is in proportion to the progress of the competition, the competitor's movements, and the characteristics of the device used .

#### **6- The ability to adapt to changing situations :**

It is the ability of the athlete to change the motor program to be implemented to suit the change of situation .

#### **7- The ability to put in the right effort :**

It is the athlete's ability to perform his movements in a coordinated manner in terms of the amount of force used, time and place to serve the achievement of the desired goal. (3 : 16, 17)

### **Associated Studies :**

#### **First: Arabic Studies :**

- 1- **The study of Mustafa Ahmed Abdul Majeed Al-Samarrai (2021 AD) (1) :** entitled the percentage of the contribution of some harmonic and physical abilities in the performance of some racket games skills for students of the College of Physical Education and Sports Sciences in Kuwait. The study aimed to identify the extent of the contribution of some harmonic and physical abilities associated with improving the performance of some tennis skills (tennis - squash - badminton) for students of the College of Physical Education and Sports Sciences in Iraq. 285) Student and the researcher relied on the harmonic abilities form and its tests and physical abilities and tests, and the skill tests form for the skills under research and the content of (tennis - squash - badminton) as tools for data collection, and the

researcher reached to identify the harmonic abilities that contributed to the performance of the skills of both (tennis - Squash - badminton) for students of the College of Physical Education and Sports Sciences in Iraq, which are (compatibility, control of changing direction, ability to control and spatial orientation, kinesthetic perception, transitional speed, reaction speed, kinetic balance) as the researcher reached the physical abilities required for those The skills are (the speed characteristic of the muscles of the arms, coordination, balance, flexibility, agility, speed, endurance) .

- 2- **Study of Iman Ibrahim Haridi (2020 AD) (10)** : The effect of an educational program using harmonic abilities on the performance of some methodological gymnastics skills for students of the first cycle of basic education, and the study aimed to design an educational program using the harmonic abilities of students in the first cycle of basic education in some Gymnastics skills, and the researcher used the quasi-experimental approach for its relevance to the nature of this study, and the research community included the students of the sixth primary grade in the Sahel Saleem Educational Administration in Assiut Governorate, and their number was (200) students, and the sample of the research was chosen by the intentional method, which numbered (40) students, of whom (20) students were a group. Experimental and (20) students as a control group, and the researcher used to collect data an expert opinion survey form to determine the harmonic abilities associated with the gymnastics skills under research and to determine the tests for the harmonic abilities, as well as a form to assess the level of skill performance and forms to record the data, and the researcher concluded that the educational program had a positive impact on the education of Students learn gymnastics skills and also improve the combinatorial abilities of the skills in question.
- 3- **Ghada Ali Anwar Ali's study (2020 AD) (4)** : entitled the effectiveness of an educational program using some Montessori activities on the level of harmonious abilities and psychological development for deaf and dumb students. The study aimed to design an educational program using some Montessori activities at the level of harmonious abilities and psychological development for deaf-mute students in order to identify: the effectiveness of the educational program on developing harmonic abilities (determining the situation - motor balance - speed of reaction - ability to make effort - motor linkage) for students Deaf and dumb . Also, the effectiveness of the educational program on psychological development (self-confidence - focus attention - reaction speed) for deaf and dumb students. The researcher used the experimental method for its relevance to the nature of this study through the experimental design of one experimental group, which depends on the inter-tribal and post-measurement. The research community consisted of all Al-Amal Schools for the deaf, dumb and hard of hearing in Sharkia Governorate. The researcher chose the study sample by deliberate method from the students of Al-Amal School for the Deaf and Dumb in Zagazig city, their strength was (35) students, (5) students were excluded due to lack of integrity and increased obesity, they were withdrawn. The number of (10) students for the exploratory study became the strength of the research sample (20) students, and the researcher subjected them to the basic research experience, which is the Montessori activities. In collecting the data of this research, the researcher used the following tools, which are (tools indicating growth rates), (chronological age by referring to the date of birth to the nearest month), (height by the rheostat to the nearest centimeter) and (body weight by means of a medical scale "to the nearest 100 grams"). The tools and devices used in the measurements of the research variables are (plastic cones, plastic dishes, measuring tape, Swedish chairs, colored papers and holographic cubes, a device for measuring height (cm) erstameter, a calibrated

medical scale for measuring weight (kg) and the physical characteristics and tests that you measure under study. The most important results of the study were the effect of the proposed program using the Montessori activities positively on the harmonic abilities (determining the situation - motor balance - reaction speed - ability to make effort - motor linkage) for the deaf-mute students (under study) and the effect of the proposed program using the Montessori activities. Positively on psychological development (self-confidence - focus attention - reaction speed) for deaf-mute students. There is a significant improvement in the measurements (inter- and dimensional) in the harmonic abilities of the students. The deaf is dumb (under study).

- 4- Study of Ahmed Mohamed Abdel Moneim Mohamed (2019 AD) (11) :** The effect of developing some harmonic abilities in the light of the contribution ratios on the level of performance of a kinetic sentence on the floor movement apparatus in gymnastics. The study aimed at designing a program for combinatorial abilities and knowing its impact on some aspects of attention and technical performance of basic skills in table tennis through the impact of the proposed program on the development of some basic skills and some aspects of attention in table tennis and knowing the correlation between (compatibility abilities and some aspects of attention and the level of technical performance For basic skills), the researcher used the experimental approach on a basic sample of (10) students and (10) students of an exploratory sample. The basics of table tennis suitable for the nature of the age group (13-15) years are (the ability to respond quickly, the ability to connect, the ability to adapt to changing situations, the ability to assess the situation, the ability to make the appropriate effort) and the most important aspects of attention to skills. The basic sport of table tennis suitable for the nature of the age group (13-15) years is (focusing of attention, diversion of the mind Bah, distribution of attention). The researcher also concluded that the proposed educational program for developing the harmonic abilities of table tennis has a positive impact on the level of both the harmonic abilities, the manifestations of attention and the technical performance of the basic skills in the table tennis sport under study ..

#### **Second: Foreign Studies :**

- 5 - The study of Agniezria Jadach (2005 AD) (2):** entitled The relationship between kinetic harmonic abilities and playing efficiency among female handball players. The sample consisted of (25) juniors representing the age group (12-13 years), and the researcher followed the descriptive approach, and the most important results were the design of two tests to measure the combinatorial abilities (kinetic diversity - kinetic adaptation), where the study showed that these two abilities are the most important and related to the reel. Hand.
- 6 - A study by Stanistaw and Henryk (2005) (16) :** On the level of harmonic abilities and playing prowess of young football players. The study aimed to identify the effect of harmonic abilities on the motor behavior of young football players and to know the effect of harmonic abilities on the schematic style of young football players. It is (motor response speed, balance, motor speed, visual harmonic performance) and the development of harmonic abilities in the study had a positive effect on both behavior (motor and schematic).

#### **The extent of benefit achieved from these studies:**

**In light of the previously presented Arab and foreign studies, some important indications that can be used in determining the beginning of the current study can be drawn as follows :**

- **In terms of the year :** Arabic studies were limited to the years (2019 AD to 2021 AD), and foreign studies were from (2005 AD)

- **In terms of objectives** : These studies aimed to identify the harmonic abilities and physical tests of each sport separately and to know their impact and their effectiveness on the high level of performance of sports skills for some sports such as (racquet games, gymnastics, handball and football) and the extent of the correlation between different physical abilities And the physical tests and sports skills of those games, and these studies helped the researcher because they are related to one or more aspects of the current study to set the objectives of the current study, and so the aim of this study is: The harmonious abilities of children from the age of (6-9) years .
- **In terms of the method used** : some studies used the descriptive method (survey study) and some studies the experimental method in order to suit each study separately to the nature of the sample, the environment and the chosen sport .
- **In terms of the sample** : the number of samples in the aforementioned studies ranged between (20 to 285), varied between university students, players, beginners, juniors, school students, and people with special needs. This difference in the size and type of the study sample is due to the nature and objectives of those studies. This researcher has reported In determining the size and type of the current study sample, where the researcher used (180) novice children who practice tennis at the Public Service Center in the Olympic Village at Assiut University
- **In terms of results** : Most of the results of the studies on harmonic abilities concluded that most of the harmonic abilities related to sports that were studied in these studies had a positive impact on the development and improvement of the performance of sports skills related to the physical tests of each sport, and some studies found significant differences. A statistic between the averages of the tribal and remote measurements of the control group in the tests and abilities in favor of the post-measurement in the studies that used the experimental method and also that used the descriptive survey method .

#### **Study procedures :**

#### **Study Approach :**

The researcher used the descriptive approach (survey studies) for its suitability to the nature of this study .

#### **research community :**

The research community is represented in children from the age of (6 to 9) years in Assiut Governorate .

#### **The study sample :**

The sample of the study was chosen in a deliberate, random manner and consisted of (180) children who practice tennis at the service center operating in the Olympic Village at Assiut University. All are more than (500) regular practitioners of the game for the age group (6-9) years and due to the similarity of the children of that stage in the kinetic characteristics, they were classified as follows :

- The age group of (6:7) is 60 children, the age group of (7:8) is 60 children, and the age group of (8:9) is 60 children .

**The homogeneity of the research sample :**

Table (1)

The arithmetic mean, standard deviation, and the value of the skewness coefficient in the variables Age, height and weight in question

(n = 202)

Variables	Measuring Unit	SMA	Standard Deviation	Skew Modulus
Age	Month	105.6	3.3	0.38
Height	poison	102.4	4.4	0.96
Weight	K g	37.8	8.7	-0.2

It is clear from **Table (1)** that all the skew coefficients were limited to (+ / - 3), which means that there is homogeneity among the members of the research sample in the variables age, height and weight .

**Data collection tools :**

The researcher used a number of means to collect data in proportion to the nature of the research and the type of data to be obtained, which are as follows :

**- Analysis of scientific references :**

The researcher analyzed the references and scientific research to determine the harmonic abilities and the physical and skill tests that measure them .

**The most important harmonic capabilities suitable for the sample under study and the most appropriate tests to measure it :**

Through the analysis of scientific references and related studies, such as **the study of Mustafa Ahmed Al-Samarrai (2021 AD) (6), the study of Iman Ibrahim Haridi (2020 AD) (10), the study of Ghada Ali Anwar (2020 AD) (4) and the study of Ahmed Mohamed Abdel Moneim (2019 AD) (11)** The researcher identifies the most important combinatorial abilities appropriate to the study, the sample, and the age group under study, for which standardized scientific tests are available to measure them. This explains :

Table (2)

Percentage of expert opinions on identifying combinatorial capabilities

(n = 7)

M	Harmonic capabilities	percentage
1	Situation estimation	100%
2	motor linkage	95%
3	kinetic rhythm	37.33%
4	motor response	50%
5	kinesthetic sensation	100%
6	kinetic equilibrium	100%
7	Flexibility	100%
8	Physical adaptation to changing situations	100%
9	spatial orientation	45.34%
10	The ability to put in the right effort	100%
11	Transition speed	50.55%
12	body compatibility	60.33%
13	reaction speed	100%
14	motor control	55.33%

It is clear from **Table (2)** that the harmonic abilities that got a percentage higher than 95% are “estimation of the situation - kinetic linkage – kinetic equilibrium – kinetic adaptation to changing situations – the ability to make the appropriate effort – reaction speed .”.

The researcher analyzed the content of some previous studies and scientific references in order to choose the most used and appropriate physical tests for this research. Form - **Attachment (4)** was presented to the experts, **Attachment (1)**, to determine its relative importance as shown in the following table .

Table (3)  
Percentage of expert opinions on the most important physical tests  
that are performed It measures the harmonic capabilities

(n = 7)

Combinatorial abilities	Tests	Materiality
Balance	<b>Standing on the ball of the foot balance beam</b>	<b>91%</b>
	Jumping and balancing over the marks	<b>16.5%</b>
	numbered circles	<b>16.5%</b>
Flexibility	<b>Bend the torso forward from standing</b>	<b>93%</b>
	Bend the torso forward from sitting tall	<b>33%</b>
	Bend the torso backward from the prone	<b>17%</b>
Agility	<b>Barrow zigzag jogging</b>	<b>95%</b>
	Running in the form of the letter ∞	<b>16.5%</b>
	Leaning prone from a standing position	<b>16.5%</b>
Kinetic speed	Running in place (15 sec)	<b>16.5%</b>
	30m sprint from high start	<b>67%</b>
	<b>Run 40m from a high start</b>	<b>98%</b>
	<b>Jumping distance with eyes closed</b>	<b>97%</b>
Kinesthetic sensation	Inhibitions of kinesthetic sensation	<b>33%</b>
	Grip forces of the variable for kinetic sensation	<b>17%</b>

In light of the experts' opinions, the following physical tests were selected on the basis of the highest percentage for one test out of three tests to measure harmonic abilities (balance - flexibility - agility - motor speed - kinetic sensation) These tests are considered annex (4) the most widely used and appropriate to achieve the objectives of the study. **These tests are :**

1 - Test standing on the crossbar with the instep perpendicular to it to measure (balance)

2 - The test of bending the torso forward from standing (flexibility)

3 - Zigzag running test by Barrow's method to measure (agility)

4 - A 40-meter sprint test from a high start to measure (kinetic speed)

5 - The jump test for a distance with the eyes closed to measure the (kinesthetic sensation)

#### Scientific Transactions for Exams :

#### Validity of differentiation of the tests : -

The researcher used the validity of the differentiation by using the peripheral comparison between the highest and lowest spring for the number (40) students from the same research community and outside the sample, where the number of (11) students as a higher spring and (11) students as a lower spring were withdrawn .



Table (4)  
The significance of the differences between the higher quartile and the lower quartile In the for the survey sample under research

(n = 22)

Variables	Tests	High Spring		Lowest Spring		The calculated "t" value	Indication
		Arithmetic Mean	standard deviation	Arithmetic Mean	standard deviation		
Posture determination tests	first	96.00	1.18	84.64	3.32	10.68	Dal
	second	95.55	0.93	89.00	2.10	9.45	Dal
kinetic equilibrium tests	first	10.82	0.60	14.73	0.47	17.00	Dal
	second	16.09	1.30	21.36	1.03	10.55	Dal
The ability to react quickly	first	7.18	0.87	10.73	0.79	10.00	Dal
	second	3.09	0.30	8.82	1.72	10.87	Dal
Motor linkage ability tests	first	12.91	2.02	4.55	0.52	13.28	Dal
	Second	13.64	2.66	2.18	0.75	13.76	Dal
Tests the ability to adapt to changing situations	first	7.09	1.45	2.55	0.52	9.81	Dal
	second					10.27	Dal
The ability to put in the right effort	first	8.00	1.61	2.27	0.90	18.30	Dal
	second	52.55	3.91	30.18	1.08	13.05	Dal

Tabular value of "T" at the level of 0.05 = 2.09

It is clear from the results of Table (4) that there are statistically significant differences between the higher and lower quartiles in the tests of the survey sample in favor of the higher quartile, where the calculated "T" value ranged between (9.45: 18.30), which is greater than its tabular value, which indicates the validity of the tests. And it is valid for what it was set up for .

**Tests stability**

Table (5)  
Correlation coefficient between the first two applications and the second application In the tests under consideration

(n = 22)

Variables	Tests	first application		Re-application		The calculated "R" value	Indication
		Arithmetic Mean	standard deviation	Arithmetic Mean	standard deviation		
Posture determination tests	first	91.23	4.96	91.78	5.16	0.97	Dal
	second	93.00	2.95	93.20	3.04	0.92	Dal
kinetic equilibrium tests	first	12.95	1.63	13.08	1.75	0.90	Dal
	second	18.90	2.23	19.08	2.41	0.96	Dal
The ability to react quickly	first	8.98	1.53	9.10	1.65	0.90	Dal
	second	5.25	2.48	4.93	2.26	0.91	Dal
Motor linkage ability tests	first	7.60	3.59	7.80	3.88	0.86	Dal
	Second	6.30	4.90	6.40	5.06	0.88	Dal
Tests the ability to adapt to changing situations	first	4.23	2.02	4.43	2.37	0.91	Dal
	second	4.85	2.39	4.98	2.62	0.89	Dal
The ability to put in the right effort	first	38.43	9.52	38.58	9.79	0.92	Dal
	second	53.85	2.95	53.53	2.79	0.92	Dal

The tabular value of "R" at the level of 0.05 = 0.42

It is clear from the previous table that there is a statistically significant correlation

coefficient between the first application and re-application in the physical tests under discussion, which indicates the stability of those tests, as the correlation coefficient ranged between (0.86: 0.97) which is greater than the tabular “R” value at the level (0.5)

**Statistical treatments used in the study :**

**The researcher used the following statistical treatments:**

The skew coefficient - The standard deviation- Percentage - Correlation coefficient  
 Relative importance - Variance analysis – Spring top – Lower spring - SMA  
 Calculated T-value

**Tools and equipment used in conducting the tests**

- A ristometer for measuring height and a medical scale for measuring weight
- Stopwatch to measure the time by the second
- Centimeter tape measure
- Collars, flags, jump ropes and training cones
- Barriers height 20 cm, 30 cm

**Application of physical tests and tests that measure harmonic abilities :**

The researcher applied the tests (compatibility/physical abilities) on the basic sample after making sure of its validity and stability on the stadiums of the Olympic Village at Assiut University from (16 to 21 May 2021) with the help of some of the trained masters in making all the measurements .

**Presentation, interpretation and discussion of results**

The first question :

- **Are there any statistically significant differences between the three age groups (6-7), (7-8), (8-9) in the level of harmonic abilities related to tennis for the sample under study ?**

Table (6)

Analysis of variance for tests of harmonic abilities of the sample under study For the dental stages (6-7), (7-8), (8-9)

(n = 180)

Variables	Test	Contrast source	degrees of freedom	sum of squares	average sum of squares	The calculated 'f' value
Tests the ability to determine the position in centimeters	first	between groups	4	0.54	0.14	49.28
		within groups	174	1.87	0.01	
	Second	between groups	4	597.10	149.28	39.73
		within groups	174	4012.95	23.06	
Motion balance ability tests per second	first	between groups	4	3480.13	870.03	78.68
		within groups	174	3072.07	17.66	
	Second	between groups	4	1203.73	300.93	81.04
		within groups	174	1318.07	7.58	
Reaction rate per second	first	between groups	4	270.00	67.50	41.61
		within groups	174	149.27	0.86	
	Second	between groups	4	868.04	217.01	92.89
		within groups	174	465.93	2.68	
Kinetic link ability tests Number of balls	first	between groups	4	500.00	125.00	65.18
		within groups	174	333.67	1.92	
	Second	between groups	4	486.00	121.50	98.92
		within groups	174	227.60	1.31	

Tests the ability to adapt to changing situations how often	first	between groups	4	4103.33	1025.83	93.65
		within groups	174	333.67	1.92	
	Second	between groups	4	535.96	133.99	5.82
		within groups	174	235.68	1.35	
The ability to put in the right effort	first	between groups	4	1864.38	466.10	66.78
		within groups	174	1214.47	6.98	
	Second	between groups	4	120.71	30.18	5.05
		within groups	174	1040.27	5.98	

Table value of q = 2.46

It is evident from **Table (6)** that there are statistically significant differences at the level of 0.5 in all tests of compatibility abilities for the sample under study for the age groups (6-7), (7-8), (8-9) years, where the value of " The calculated q is between (5.05:98.92), and this means that there are differences between the measurements, which requires the use of the LSD test to determine the most accurate significant difference between the averages of these measurements .

**The second question :**

**- Is there a statistically significant correlation between the harmonic abilities and some anthropometric variables for the sample from (6-9) years ?**

Table (7)

The significance of the differences between the averages of the harmonic ability tests For the age groups (6-7), (7-8), (8-9) under study using the L.S.D test

M	Tests	Variable	Group	Groups		
				6-7	7-8	8-9
1	Tests the ability to Determine the position in centimeters	First	6-7			
			7-8		*-5.63	*-10.77
			8-9			*-5.13
		Second	6-7		*-2.33	*-6.27
			7-8			*-3.93
			8-9			
2	Motion balance ability tests per second	First	6-7		2.40	*-3.33
			7-8			0.93*-
			8-9			
		Second	6-7		*3	*5.37
			7-8			*2.37
			8-9			
3	Reaction rate per second	First	6-7		*4	*-2.26
			7-8			*-2.76
			8-9			
		Second	6-7		*-5.33	*-1.40
			7-8			*-3.93
			8-9			
4	Kinetic link ability tests Number of balls	First	6-7		*-8.17	*-11.33
			7-8			*-3.17
			8-9			
		Second	6-7		*-10.50	*-11.07
			7-8			*-0.57
			8-9			
5	Tests the ability to adapt to changing situations	First	6-7		*-4.20	*-5.60
			7-8			*-1.40
			8-9			
		Second	6-7		*-4.6	*-9.53
			7-8			
			8-9			

	how often		7-8		*-4.93
			8-9		
	The ability to put in the right effort	First	6-7	*-19.83	*-22.17
			7-8		*-2.33
6		Second	6-7	0.87	-1.33
			7-8		*-2
			8-9		

It is clear from Table (7) the significance of the differences between the averages of the combinatorial abilities tests between the different age groups using the least significant difference D LS, where it is clear that there are significant differences between the stage (6-7) years, the stage (7-8) years, the stage (8-9) years in the level of performance of harmonic abilities tests in favor of stage (8-9) in most of the harmonic abilities tests .

Table (8)

Correlation coefficient between tests of combinatorial abilities and some anthropometric variables (height - weight) under investigation

(n = 540)

M	Variables	Tests	Height	Weight	Indication
1	Tests the ability to Determine the position	First	0.46*	0.22*	Dal
		Second	0.36*	0.30*	Dal
2	Motion balance ability tests	First	-0.41*	-0.31*	Dal
		Second	-0.43*	-0.35*	Dal
3	The ability to Reaction rate	First	-0.13	-0.09	Dal
		Second	0.27*	0.07	Dal
4	Kinetic link ability tests	First	0.43*	0.31*	Dal
		Second	0.49*	0.31*	Dal
5	Tests the ability to adapt to changing situations	First	0.51*	0.33*	Dal
		Second	0.18	0.22*	Dal
6	The ability to put in the right effort	First	0.44*	0.32*	Dal
		Second	0.01	0.03	Dal

The tabular value of "t" at the level of 0.05 = 0.20

It is clear from the previous table that there are statistically significant correlation coefficients between the combinatorial abilities tests and some anthropometric variables (length - weight) in most of them, where the correlation coefficients ranged between (0.22: 0.51) which is greater than the tabular "t" value at the level (0.5), while Except for some tests (the ability to react quickly (the first with height and weight, the second with weight) - tests of the ability to adapt to changing situations (the second with height) - the ability to make the appropriate effort (the second with height and weight)

**Discuss the results :**

It is evident from Table (6) that there are significant differences between the stage (6-7) years, (7-8) years, (8-9) years in the level of performance of the combinatorial abilities tests .

The researcher attributed this to the fact that children of the stage (6-7 years) have a level of maturity and motor development that qualifies them to perform those tests at a good level, and they are ready to learn all sports motor skills of all kinds such as continuous skills, and the most complex and difficult skills .

The researcher believes that the stage (6-7 years) is the appropriate age stage to start practicing and teaching tennis skills, as the children of this stage are characterized by many

harmonic abilities that can grow by completing their learning of the rest of the skills in tennis. And that the novice's possession of these harmonic abilities contributes to the speed, acquisition and mastery of motor skills in tennis, as this is reflected in the high level of technical performance ..

Here the importance of harmonic abilities becomes clear in that they share with the motor skills of tennis to form the harmonic foundations necessary to develop the beginner level, where the harmonious abilities play an important role in acquiring motor skills, as the time required to learn any motor skill depends on the level of those abilities at the beginning of learning, and therefore it is necessary to have an appropriate level of harmonic abilities when learning motor skills in tennis ..

It is clear from Table (7) that there are significant differences between the stage (6-7) years, the stage (7-8) years, and the stage (8-9) years in the level of performance of the combinatorial abilities tests in favor of the stage (8-9) in most of the abilities tests compatibility .

Thus, it is clear that the children of this stage are characterized by continuous activity and energy, which we consider as manifestations of motor behavior, and movement becomes a goal, and there is growth, improvement and development in the type of movement, and a relatively high level of accuracy is achieved, and movement at this stage increases accuracy, speed, connection and complexity, and with it the child's motor skill increases. To do sports and games.

Also, the child at this stage may develop the ability to absorb a motor duty commensurate with his age, which occurs as a result of the child's motor motives, as well as as a result of proper guidance by the person in charge of education and training of beginners

And the child at this stage is characterized by the speed of learning the consensual abilities. This may be the fulfillment of the second question of the study, which is to determine the appropriate age stage to start practicing and teaching tennis, which is the stage (6-7 years) .

It is clear from Table (8) that there are statistically significant correlation coefficients between the combinatorial ability tests and some anthropometric variables (height - weight), in most of them, which indicates the strong relationship between chronological age, maturity, and readiness period for young people of the same age, which does not mean their learning of a mathematical skill. Certain factors are at one and equal level, but there are other factors that affect this, such as the environment, psychological readiness, ambition, physical measurements, method of learning, the presence of a qualified teacher and other factors. This leads to the emergence of individual differences between learners despite their agreement in the chronological age, as some of them are able to perform some skills that others may not be able to perform, but these differences are often limited .

This is consistent with the study of: Iman Ibrahim Haridi (2020 AD) (10) and Ghada Ali Anwar (2020 AD) study (4), where they indicated that there is a strong relationship between the development of combinatorial abilities and the high level of skill performance among learners at this stage .

The researcher attributes the results of the correlational relations between the harmonic abilities (motor speed - agility - balance - compatibility) and the variable (time and accuracy) for the skills under study to the skill and physical tests that were used, which contributed to the improvement of the harmonic abilities (under study) among the beginners of the basic sample well, and he sees The researcher said that harmonic abilities are one of the performance requirements in tennis, as the availability of harmonic abilities among beginners and juniors leads to a broadening of the motor skills base and a high level of skillful performance for the learner .

**Conclusions :**

**In light of the objectives of the study, its questions, and the statistical treatments used by the researcher, and based on what the results of the study showed, the researcher reached the following conclusions :**

- 1- Harmonic abilities (the ability to determine the situation, the ability to balance movement, the ability to speed reaction, the ability to connect the motor, the ability to adapt to changing situations, the ability to make the appropriate effort) have a positive impact on the start of learning and mastering tennis skills. Studying . .
- 2- The researcher reached the appropriate physical tests to measure the aforementioned harmonic abilities of the skills under study, which are as follows (the test of standing on the crossbar with a longitudinal perpendicular to the measure (balance), the test of bending the trunk forward from standing (flexibility), the test of zigzag running in the Barrow method to measure (agility). ), a 40-meter sprint test from a high start to measure (kinetic speed), a jump test for a distance with eyes closed to measure (kinetic sensation .(
- 3- The combinatorial abilities contained in the program have an effective impact on improving the level of learners' harmonic abilities .
- 4- The study showed the percentages of improvement differences in the harmonic abilities variable of the sample .
- 5- There are significant differences between the stages (6-7) years, (7-8) years, (8-9) years in the level of performance of combinatorial abilities . .
- 6- The age group (6-7 years) is the appropriate age to start practicing and teaching some tennis skills .

**Recommendations :**

- 1- To start practicing tennis from the age group (6-7 years) to teach and learn simple basic skills
- 2- That the Egyptian Tennis Federation and its branches in the governorates hold official competitions for the age groups for youngsters, starting from the age of under (12) years instead of under (14) years to increase and raise the technical level while continuing to acquire skills in tennis ..
- 3- Refer to the scientific foundations and rules used in building and designing educational programs when starting to teach tennis skills
- 4- Interest in expanding the base of juniors in tennis and starting early selection according to codified scientific foundations
- 5- The necessity of applying compatibility tests to select the juniors in tennis and those wishing to be educated .

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