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Learn some basic skills and biomechanical variables for mini tennis players

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1.1 introduction: -

2. Introduction and importance of research

The advanced sports level reached by many countries is the direction of progress witnessed by the world in various scientific fields, which was clear in achieving sports achievements, which most countries used the best methods and training tools in the field of sports in order to bring the player to a high level in the performance of basic skills for any game, and since the goal of any coach in guiding efforts to achieve achievement was to use specialized training and focus on the requirements of technical performance In the type of sports effectiveness, privacy in training is one of the basic laws governing the training process in achieving its goal, which is the high level of achievement and the use of modern educational means in the educational process is effective in reaching better learning with an economy of effort, time and money, especially when using appropriate educational means and the type of skill in terms of its type and characteristics and that the level of performance in tennis in recent years has increased clearly and efforts have doubled The change to the high skill level and speed of performance significantly in the world as tennis is a sport that depends heavily on the factor of speed and type in performance methods and that the skills of ground tennis skills are difficult and complex as well as for many types. And the multiplicity of its uses at one point and most of these skills are classified among open skills whose environment is unexpected, which the coach or teacher must increase the effectiveness of learning by enabling the learner to recognize most of the exciting things that can be faced and it is very important for the human being to learn at an early age as it is the basis of sports events that relate to mastering the basic skills of each sporting event, which was the interest of most specialists in the use of modern educational means In terms of the use of ball rackets suitable for age groups as there are no rules specifying the size of the tennis racket, it is different and varied, although all rackets, approximately one length (68cm) and weigh (397g) in the case of men (369g) in the case of women. The players built in the weight of the right rackets are limited between (200-245g) so the player must be careful when choosing to hit if the light bat needs more strength to repel the ball the ground tennis game contains diverse skills and fast ones basic and derivative and the development of the performance of those skills is largely related to the nature of the possibilities and mental abilities derived from the general physical qualities of the tennis game and to offer good results in the level of skill performance and according to interest With the educational

and training tools of the game and according to the style of the coach or teacher in accordance with the physical abilities of each player and the age groups in question we have to find an educational tool that contributes effectively to learning some tennis skills and the specificity of the game using tools determined by certain weights and sizes such as balls and strike in addition to the requirements of the other player the researcher was satisfied to delve into one of the important problems that the player is exposed to within the ground tennis The specific age group is researching to find out what many specialists in the game are about the appropriate weight of the player's physical measurements time implicitly the mass of the arm used carrying the bat (fiercearm) in accordance with the weight of the bat and not the use of educational means and tools arbitrarily, may be to know the direct effect of the mass of the fierce arm and according to the weight of the bat in order to improve the performance of the players and learn them for some basic tennis skills. With small ages in order to increase the effectiveness of learning and increase the accuracy of the performance of skills and development and development of his level of learning and mastery of skill.

3-The research approach and its field procedures:

3.1 Research approach:

The researcherusedthe experimental method by designing the single group to suit the nature of the research problem, and by applying this method to the researcher to follow a set of rules and procedures to reach the target results as the experimental curriculum is one of the approaches characterized by a role that is not only characterized by describing the current situation of the event or phenomenon but also to a clear and intended intervention by the researcher aims to reshape the reality of the phenomenon event through the use of procedures or events of certain changes and then accurately citing the results Analysis and interpretation [(1).]

3.2 The research community and its sample:

The study of a phenomenon or problem requires the availability of data or information necessary this phenomenon or problem to help the researcher to make an appropriate decision or judgment about it, the clear identification of the study society, which means all elements or vocabulary that the researcher will study is very necessary in the use of the best scientific method to study this society and the process of choosing his game is one of the main steps to achieve this i.e. the researcher chooses a sample in which he sees that it represents the original society that conducts an honest study [(2).]

Therefore,the researcheridentified his research complex with the players of the central tennis federation of Diyala, including Diyala Club - Baquba Club - Martyr Arkan Club, but the members of the sample were selected in the deliberate manner of

[(1)]Yehia chosen Aliyan othman muhammad Nadeem :Method Search Scientific (house Purely For publication And distribution Oman2000) ,
[(2)]muhammad improve Allawi And Muhammad. assist Religion approval :scaling in Education Sports And science. Self Sports (Oman house Thought Arab 2000) ,

the age group (8-12) and the number (6)[(*),] players, the group of researchers who conduct their daily training on them as a coach in the Central Federation /Branch Diyala for this category andbconsidering the players committed to their training and excluding the injured from them, so the sample formed 46% of the communityofB-urging 13 games as the vocabulary was applied that the curriculum to them and to avoid the researcher factors that affect his experimental results for the equal sample using man and ni statistics for small samples.

3-3 Means, tools and devices used in the research: -

3.3.1 Means of gathering **information:**

- Arab and foreign sources and references.
- Personal midwives.
- The International Information Network (Internet).
- Information collection form.

3-3-2 Tools and devices used in the research:

- Sony video camera type (Japanese origin number 1).
- Samsung type 1 telephone camera.
- Tape measuring number (1).
- Tennis balls as diverse as head players.
- Japanese-made ketecto.
- People

3-4 steps to conduct the search: -

3.4.1 Identify tests used in the research:

After looking at the sources and references that serve the research objectives and after presenting a set of skill tests to measure some of the basic skills in playing tennis on a group of experts [(*),] andb.d. taking into account the ratio of agreement of 60% was determined the appropriate choice of skills researched.

3-4-2 skill tests [(*)]:-

[(*)] Annex 1.
[(*)] Extension 2.
[(*)] Extension 3.

3-4-2-1 Front-strike test:[1]

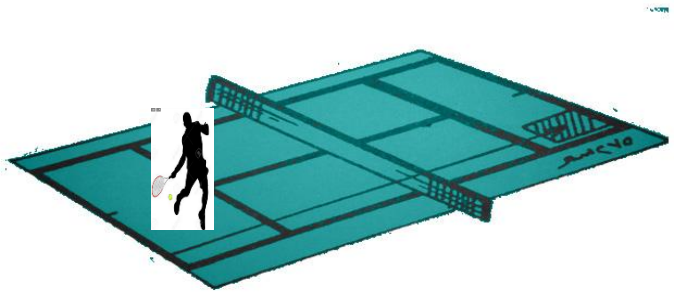
The purpose of the test / measure the accuracy of the long straight front strike.

The tools used / 10 balls of tennis, a square length (275) centimeters drawn on the base line and the side line by a dens.

Description of the test / The laboratory stands behind the starting line and at the start signal the coach vaccinates (10) consecutive balls and then the laboratory hits the balls towards the square drawn on the base line as in figure (1).

Registration / The laboratory records the number of balls that hit the painted box.

Test



conditions / all blows are performed in the face of the front bat.

Shape number (1)[*]

3-4-2-2 test backstroke accuracy:-

The purpose of the test/ measure the accuracy of the rear strike.

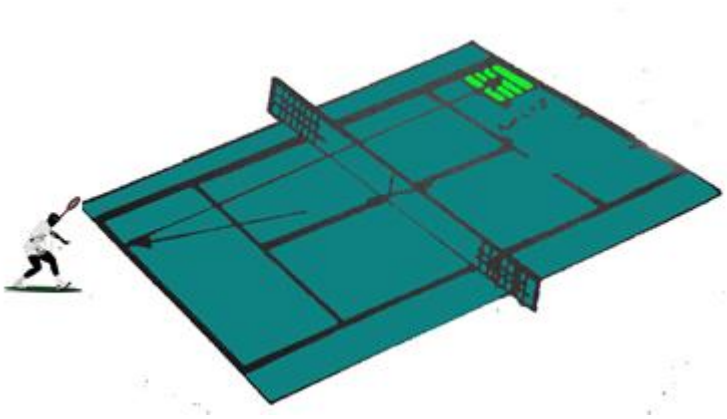
Tools used / 20tennis balls, a square length (275) drawn on the base line and side line.

Test description / The laboratory stands behind the starting line and when the start signal by the coach strikes the balls grafted by the coach towards the square drawn on the base line as in figure (2).

Registration / Record for the laboratory the number of balls that hit the box.

Test conditions / all blows lead to the face of the back bat.

[1] Secretary Al, Kholi ، beauty Al, Shafie ، Tennis (house Thought Arab ، 2001) ,
[*] Extension No. 4.



Shape number (2)[*]

3.5 Reconnaissance experiment:

In order to find the best way to implement the field research procedures, the researcher conducted a reconnaissance experiment which is (practicaltraining for the researcher tofind the negatives and answers that meet him during the test to avoid them) [1] so the researcher conducted his experiment on a group ofplayers of the Club Baquba of the Iraqi CentralTennis Federation / Diyala branch and the 4 players on Thursday 24 / 10/2019 to find out the most important obstacles that may be faced during the conduct of the research and work to correct mistakes and benefit from it during a procedure for the training specialty of his research sample as well as the work of the assistant team and the method of applying it to the test to ensure the avoidance of mistakes that the researcher can encounter in the experience of the president.

3-6 Field search procedures:

3.6.1 Tribal tests:

After conducting the reconnaissance experiment, the researcher carried out the basic procedures for the main experiment by dividing the sample into two groups of officers and the second experimental, where the researcher conducted tribal tests of basic skills, namely the front strike and the rear strike, on Sunday, 27/10/20199.

3-6-2 Curriculum:[*]

After completing the work of tribal tests, the researcher directly conducted the curriculum and the application of the learning units and was as follows where the control group works with its trainer and its own rackets during the regular educational

[*] Extension 5.

[1] Marwan Al , Ay slave Answering Foundations Scientific And the roads. Statistics For tests And measurement. in Education Sports (Oman house Thought For publication 1999) ,

units daily, but the experimental group, the assistant team [*], cooperated with the researcher to reducetheweights of speculators but relying on the classifications established by the Iraqi Central Tennis Federation and by age groups and to increase the effectiveness of the effect of training Urge to find the relationship between the weight of the bat and the mass of the strike arm in order to get the right accuracy using the relative arm mass of the weight of the size and according to the law as an arm = body blocks * 5.6 /100, and after filtering the weight of the bat for each player according to the law of levers and as it comes.

According to the system of levers = for the arm mass and the mass of the bat where:

The force* her arm = the resistance * her arm .

- Power = K*C.

K = relative mass of the atoms.

C = 9.8.

The arm of the force = the length of the arm is measured in centimeters.

As for the ratio of the bat:

Resistance = the weight of the bat that was predetermined which is the resistance and arm the length of the bat and then the researcher applied his educational units on Friday 29/10 / 20199, and on the courts of the Youth Forum of Al-Caton Tennis / The curriculum included what comes where the procedures for implementing the curriculum (6) weeks and actually (3) training units in Espo One o'day (Friday, Sunday, Tuesday).

- For the sake of the safety of work, the general features of the curriculum were presented to a group of experts and specialists [*] in motor learning and sports training to express their opinions on the appropriateness of such a sample and they have shown a set of guidelines and modifications, which the researcher took into account their opinions.

- The content of the curriculum is suitable for individuals who are searched.

- The educational units included educational training for basic skills, which the researcher singled out by its procedures of front and back strike if the educational units of each player are divided according to the weight of the bat suitable for the mass of his arm and for two weeks and so on.

- Training for two weeks with rackets of size (21) andweight (225 kg) andthree units per week for players, which have their relative arm mass that has beenpredetermined by their weights which do not exceed (24 kg - 44 kg) but for

[*] Extension 6.

units of the third and fourth week has been trained by size (23) and weight (245) and so on in proportion to the other weeks serial according to Sizes and weights [(*)] and respectively (25-27) and for the end of the curriculum in addition, the researcher only intervened in the main part of the main unit at a time of (10d) of the time of unity.

3-6-3 dimension tests:

The remote tests of the research sample were conducted on Saturday, 23/12/20199 for skill performance tests and according to the variables of the research after the completion of the curriculum prepared by the researcher and all members of the experimental sample and the officer.

3-7 Statistical means:

The researcher used the statistical bag(spss) to process the results

4- Presentation, analysis and discussion of the results of skill tests: -

4.1 Presentation and analysis of the results of tribal and remote tests of the experimental group:

4.1.1 Presentation and analysis of the results and statistical oxygen of two non-independent and interrelated samples:

Table 1

It shows the tribal and remote test scores, the value of the difference between them, the ranks of the teams, the positive and negative grades, the value of the calculated and scheduled Coxen and the level of indication of the skill tests of the experimental group.

Skills	>	<	nun	Calculated value (f)	Scheduling value (f)	Significance
Forehand	**3**	**zero**	**2**	**zero**	**zero**	**Moral**
Backhand	**6**	**zero**	**3**	**zero**	**zero**	**Moral**

Table 2

[(*)] Extension Number (7).

It shows the grades of tribal and remote tests and the value of the difference between them and the ranks of the teams and the ranks positive and negative and the value of the calculated and scheduled Coxen and its indicative level of skill tests for the control group.

Skills	>	<	nun	Calculated value (f)	Scheduling value (f)	Significance
Forehand	**zero**	**3**	**2**	**zero**	**zero**	**Moral**
Backhand	**1.5**	**1.5**	**2**	**1.5**	**zero**	**Uneconsced**

4.2 Presentation and analysis of the results of the Man and Tenny statistical test of two independent and unrelated samples:

The Mann and Tini statistical test was used for two independent and unrelated samples and the results obtained indicated a moral difference for the experimental group and the control group in the remote test and after the results were statistically processed, it was found that the value of Man and Tini calculated was smaller than that of Man and Tenny scheduling below the level of indication (0.05), indicating a moral difference for the experimental and controlling groups and the test groupthief.

Table 3

It shows the grades of tribal and remote tests and their grades, the value of Man and Ney calculated and scheduled, the level of indication of the skill tests of the experimental and controlling groups and the skill of the front strike.

Experimental Group		Control Group		Man and Ney's calculated value	Man and Ney's scheduling value	Significance
Grade	**Level**	**Grade**	**Level**			
zero	**15**	**9**	**6**	**zero**	**zero**	**Moral**

Table 4

It shows the grades of tribal and remote tests and their grades, the value of man and ney calculated and scheduled, and the level of indication of the skill tests of the experimental and controlling groups and the skill of the rear strike.

Experimental Group		Control Group		Man and Ney's calculated value	Man and Ney's scheduling value	Significance
Grade	Level	Grade	Level			
zero	15	9	6	zero	zero	Moral

4.3 Discussion of the results:

Through the results of the previous differences and after presenting and analyzing it became clear that the experimental group had moral results of the level of skill performance and both the skills researched for the front ground strike and the rear ground strike and the researcher explains the reason for the moral differences because the experimental group was characterized by its subject to an educational approach and if the educational method differed from the previous research consisting of using different rackets and the adoption of the researcher teaching the method of skill performance in a modern scientific way adopts biomechanical foundations as one of the factors of scientific contexts studied in advance and Out of the usual range and using educational means hammered and refined and its results hammered and therefore the researcher took a step that may be new in the system of educational units and a foundation that adopts especially for the small age groups and their first educational stages as a basis for building advanced players by focusing on the aspect of training and education and adopting the positive and effective effect in the specifications of motor performance (technique) which is one of the most important requirements are the play tools used and the bat one of them as the bat is considered an important requirement that helps to play good In ground tennis.

It is common that the more heavy the bat, the more the blow gained momentum forward and generally the strength of lifting the bat is the result of mass and speed, if the bat is too heavy to control, the player will lose the weighted speed of the bat in front of him and result in a lack of thrust and accordingly the weight of the ideal bat for the player must be taken into account [(1),] Which focused the researcher adopting this basis within his educational units by adopting the bio mechanical side and applying one of his important theories using the law of levers to fit the weights of the racket with the mass of the play arm on the consideration that the bat and the arm of

[(1)]Ellen meek vulva ؛ Tennis , Origin Knowledge Alexandria , 2000, .

the player represents a lever to achieve gain strength and overcome a certain resistance if we control the arm of power, which was the basic principle adopted by the researcher before starting to apply the curriculum to obtain the desired results by raising the level of skill performance of the players of the right tennis as for the results The control group, which had moral results for the front strike, the researcher attributes that the educational process by other trainers was systems with a positive effect on being considered easier than the skill of the back strike, whose results were not moral by adopting the basis of other sub-skills derived from them and that it is easy to learn and learners understood the explanation of the technical performance of this skill and was applied by a few mistakes which achieved positive results.

As for the skill of the back strike, it is a difficult skill in the style of technique and the opposite steps of the player's body when receiving the ball and the movement of the ball next to the player opposite his arm are all factors that hinder the development of performance and the accurate and correct technique of this skill and this is illustrated by the unethical results mentioned above [(2).]

Conclusion

In light of the findings ofthe researcher through the procedure of practical applications to know the impact of the curriculum using different weights rackets suitable for the arm block in learning and developing the skill performance of the front ground strike and the back ground strike of the mini tennis players.

The following was concluded:

1- There is a positive effect in the curriculum using different racket weights in the education and development of the forward strike and backstroke skills, especially for the experimental group.
2- There is a preference in the results of the forward strike of the control group using regular players' rackets, while the results of the back strike did not show any significant development in the level of performance between the tribal and remote tests of the same group.
3- The experimental and controlling groups were characterized by the ratios of the results of the remote test and in favor of the experimental group in the skill tests used in the research.
4- The weights of the rackets identified by the researcher (21, 23, 25, 27) and according to the mass of the players' arm had a positive impact in learning some of the basic skills in tennis that the researcher focused on in his research.
    1- Use biomechanical principles for the purpose of diversifying the curriculum to identify indicators of areas of strength in performance that contribute to the correct learning process.

[(2)]husein Mardan age ؛ Al, Bayou Mechanical Basis in movements Sports , house Books And the documents. , 2012 , .

2- The researcher recommends the use of weight rackets and that the researcher predetermined by the sample used to be suitable for the player's arm mass and by the age group studied.
3- Conduct similar research and different samples for age groups graded according to the divisions of the International Tennis Federation in order to connect the bio-mechanical side to determine an educational method that serves the skill and its correct motor path to ensure the process of learning and performing skills as free of mistakes as possible.

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Supplements: -

Extension No. (1)

A form with the names of the players and the length of their arm, weights and ages.

to	Player's name	Player's arm length	Player weight	Age of play
1	Rami Qais	48 cm	24 kg	8 years
2	Mohamed Riaz	65 cm	37 kg	11 years old
3	Ibrahim Mohamed	63 cm	44 kg	12 years old
4	Jamil Abd El , Halim	52 cm	33 kg	9 years
5	Jihad Ali	51 cm	39 kg	10 years

6	Qusay Abd Al , Mohsen	64 cm	44 kg	12 years old

Extension No. (2)

A form with the names of experts and specialists in ground tennis.

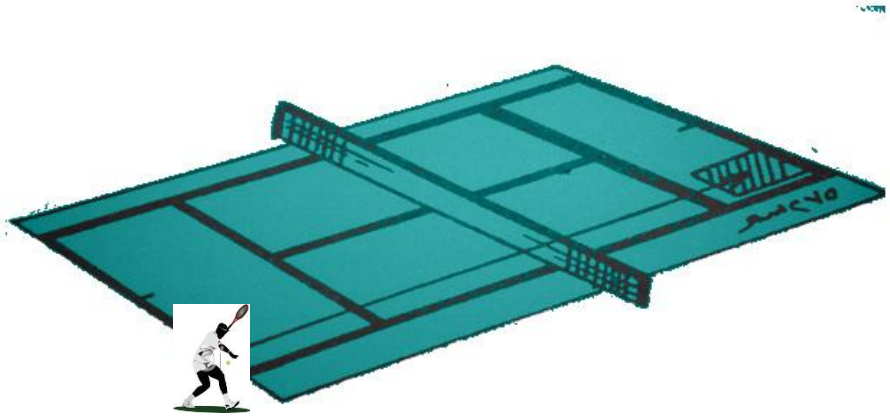
to	**Name**	**Workplace**
1	Dr. Majid Khalil Khamis	Diyala University - Faculty of Physical Education and Sports Sciences
2	Dr. Rafid Mahdi Kaddouri	Diyala University- Faculty of Physical Education and Sports Sciences
3	A.M.D. Ammar Jabbar Abbas	Diyala University- Faculty of Physical Education and Sports Sciences
4	M.Dr. Ihsan Abdul Karim	Ground Tennis Coach in Sub-Union / Diyala
5	Mohammed Asad Awad	Ground Tennis Coach in Sub-Union/ Diyala

Extension No. (3)

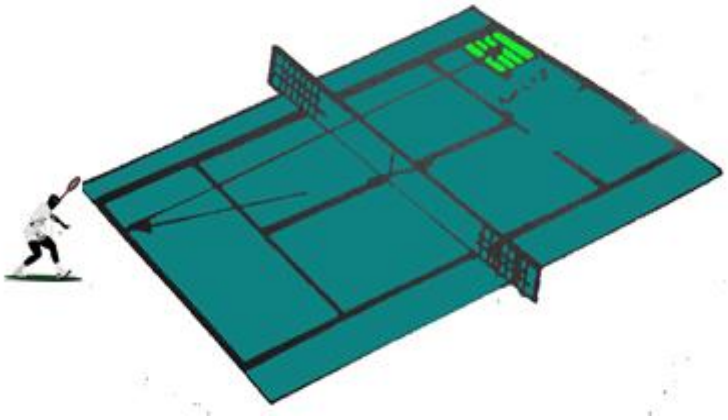
Tests used in the research.

to	**Tests used in research**
1	Front-strike test
2	Backstroke test

Extension No. (4)



Extension No. (5)



Extension No. (6)

The assistant staff.

to	Name
1	Ihsan Abd Al , Karim
2	Mohammed Asad Awad
3	Islam Hafez Yahya

Extension No. (7)

Extension No. (8)

Expert and specialist form in the field of motor learning.

to	Name	Workplace
1	Dr. Majid Khalil Khamis	Diyala University - Faculty of Physical Education and Sports Sciences
2	Dr. Rafid Mahdi Kaddouri	Diyala University- Faculty of Physical Education and Sports Sciences
3	A.M.D. Ammar Jabbar Abbas	Diyala University- Faculty of Physical Education and Sports Sciences

(*) See Annex 8.